

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 t

1. Edition

En

PES 6 A 90 D 410 RS2293

RQV 300-1425 AB982DL

supersedes -

company:

Daimler-Benz

engine:

OM 352 A

(172 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1	7,7-7,8	0,3(0,45)			
300	(+0,1) 7,8-8,0	0,9-1,5	0,2(0,4)			
1200/500		C, 1-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1675	16,0-19,3 0 - 1	-	-	-	ca. 10	100 300	min. 7,5 5,9-6,1	300	0,6-1,4
ca. 61	10,1 4,0	1440-1450 1555-1585				3a	570-630 = 2,0 800 0 - 1 370-440		1000 1450	5,0-5,4 8,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA 1400	0,4 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 500	0,25 bar 70,0-73,0 (68,0-75,0)	100	13,7-14,3 mm RW		
1200	79,0-82,0 (77,0-84,0)		LDA 1400	0 bar 62,0-64,0 (60,0-66,0)	300	10,0-16,0		
					100-220 (80-240)			./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.77

D. Adjustment Test for Manifold Pressure Compensator

MB 5,7 t

-2-

Test at n = 1400 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel - diminution difference mm (1)
2293 with 982DL	0	0,16 0,22	9,3 - 9,4 9,6 - 10,0 11,0 - 11,1

Notes

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 b

2. Edition

En

Testoil-ISO 4113

PE 10 A 90 D 520/5 LS2362

RQV 1150 AB882R

supersedes 1.75

RQV 750 AB966R ./.

company: MAN

RQV 250-1250 AB967R ./.

engine: D 2530

 10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2
 0 - 45- 72-117-144-189-216-261-288-333⁰

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 + 0,1

mm (from BDC)

Cyl. 10 !

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,7 - 6,2	0,4			
	6	2,2 - 3,2				
200	9	3,5 - 4,5				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

RQV 1150 AB882R

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	mm rev/min 3	4	5	mm rev/min 6	7	8	mm rev/min 9	10	11
ca. 56	1150 1175 1200 1250	11,3-14,6 6,0-11,2 0 -7,6 0	-	-	-	-	-	-	1150	4,7
									-	-

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
ca. 10	mm RW	1160-1170 *			100	min. 20mmRW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.76

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B. Governor Settings

RQV 750 AB966R

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 29	725 750 770 800	16,0-22,0 9,8-13,8 2,5-11,0 0	-	-	-	-	-	-	750	4,6
						3a			-	-

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
725	110,5 - 111,5	745-755 *						

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

RQV 250-1250 AB967R

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1275 1320 1370 1410 1500	14,3-17,3 11,8-14,5 4,3-10,9 0-7,8 0	-	-	-	ca. 13	100 200 350 410	7,2-10,5 5,5-8,6 0-3,2 0	1275	8,4
						3a			-	-

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1250	83,0 - 84,0	1290-1300 *						

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps ① and Governors

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WPP 001/4 MB 5,7 s

En

5. Edition

PES 6 A 90 D 410 RS2293 RQV 300-1425 AB946L,
..947L, 948L, 949L

S2293Z with 946L s.a. MB 5,7 s3

supersedes 8.77
company: Daimler-Benz
engine: 124kW(168 PS)
OM 352 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15-2,25
(2,10-2,30) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1375	10,8	7,4 - 7,5	0,3(0,45)			
300	+0,1 7,8-8,0	0,9 - 1,5	0,2(0,4)			
500	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

..946 L

Upper rated speed				Intermediate rated speed				Lower rated speed				Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	①a	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	④	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	③	rev/min 10	mm 11
ca.66	1425 1800	16,0-19,4 0 - 1		-	-	-		ca.10	100 300 570-630 750	min.7,3 5,7-5,9 2,0 0 - 1	③a	400 1450 -	1,4-2,2 8,2 -
ca.61	9,8 4,0 1700	1435-1445 1535-1565 0 - 1											

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7 mmRW	rev/min 8	Control rod travel mm 9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445*	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100 100-220 (80-240)	13,7-14,3		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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12.77

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B. Governor Settings

947L, 948L, 949L

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1425 1800	16,0-19,0 0 - 1	-	-	-	ca. 10	100 300 570-630= 2,0 750	min. 7,3 5,7-5,9 0 - 1	300 800 1420	0,6-1,2 4,0-4,5 8,2
ca. 66	9,8 4,0 1650	1435-1445 1530-1560 0 - 1				(3a)			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes mm RW	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445 947: 700 948: 700/ 0,4bar 949: 1300	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100	13,7-14,3	100-220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than co: 2

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure CompensatorTest at n = 1375 rev/min decreasing pressure - in bar gauge pressure
increasing pressure - in bar gauge pressure

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel diminution difference mm
all governors	0,68	0,22 - 0,23 0	10,8 - 10,9 10,6 - 10,7 10,4 - 10,5

En

①

Test Specifications Fuel Injection Pumps ① and Governors

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WPP 001/4 MB 5,7 v 2

4. Edition

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1066 DL

supersedes 10.80
company: Daimler-Benz
engine: OM 352 A
126 kW (171 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(1,95-2,15)

Port closing at prestroke 2,00-2,10 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4 ^{+0,1}	7,8 - 7,9	0,3(0,45)			
300	8,9-9,1	0,9 - 1,5	0,2(0,4)			
500	13,6 ^{+0,1}	C, col. 4-5	0,4(0,55)			
500	12,3 ^{+0,1}					

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
Max.	1400 1750	15,2-17,8 0 - 1	-	-	-	ca.19	100 300	min.10,5 8,9-9,1	300 500 1450	1,2 2,5-2,7 8,6
ca.62	11,4 4,0	1440-1450 1580-1610				400-470				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed ②b limitation intermediate speed rev/min ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b rev/min ④	Starting fuel delivery idle switching point ⑥ rev/min ⑥	Torque-control ⑤ travel Control rod travel mm +0,1 rev/min ⑧			
1 rev/min	2 cm³/1000 strokes	3 rev/min	4 rev/min	5 cm³/1000 strokes	6 rev/min	7 cm³/1000 strokes	8 rev/min	9 mm
LDA 1400	0,7 bar 78,0-79,0 (76,0-81,0)	1440-1450*	LDA 500	0,7 bar 72,5-74,5 (70,5-76,5)	100	72,25-82,25 15,8 - 16,2 RW	1400 1200 1000 500	12,4 12,5 13,1 13,6
			LDA 500	0 bar 58,0-60,0 (56,0-62,0)	100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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5.81

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

[illegible]

Checking values in brackets

* 1 mm less control for travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at $n = 500$ rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm
2596 with 1066 -1 DL	0,7	0,35 0,2 0	13,6 - 13,7 13,2 - 13,3 12,5 - 12,7 12,3 - 12,4

En

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MB 8,7 1

1. Edition

En

PE6A90D410RS2124

RQ 450/1250 AB 812

supersedes

company:

Daimler-Benz

engine:

OM 360

141 kW(192 PS)

1 - 5 - 3 - 6 - 2 - 4
0 - 60-120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,10-2,30) mm (from BDC) RW 10,5
2,15-2,25

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,2	8,6 - 8,7	0,3(0,45)			
450	+0,1 5,9-6,1					
800	- - -	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in 

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		④		⑤		③	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
700	15,6-16,4	700	16,0	9,2	1295-1310	450	6,0	100	min.7,5		
				4,0	1345-1375			450	5,9-6,1		
								600	0 -1,0		
								500	540 2,0		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1250	86,0-87,0 (84,0-89,0)	800		800	83,5-86,5 (81,5-88,5)		

Checking values in brackets

11.80

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 12,8 d

3. Edition

En

Testoil-ISO 4113

PE 8 A 90 D 320 LS2514

RQV 250-1250 AB993DR

250-1250 AB852DR

supersedes 5.78

company: M A N

engine: D 2538 M/MF

190 kW (256 PS)

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1 +0,50

0 - 45- 90-135-180-225-270-315°(±0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC) Cyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery with 933DR cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery with 852DR cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	11,5	10,1 - 10,3	0,3(0,45)	11,5	10,1 - 10,3	
250	+0,5 7,4-7,6	0,9 - 1,5	0,2(0,4)	+0,1 7,4-7,6	0,9 - 1,5	
800/500	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

993DR

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	①a Degree of deflection of control lever 4	rev/min 5	Control rod travel mm ④	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm ③	rev/min 10	mm 11
ca. 50	1275 1500	14,4-17,4 0 - 1	-	-	-	ca. 11	100 250 310-370 = 2,0 450	min. 7,5 5,9-6,1 0 - 1	200 700 1200	0,5-1,2 4,4-4,8 8,3
ca. 48	10,5 4,0	1290-1300 1360-1390				③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤ travel	
rev/min	cm³/1000 strokes	rev/min ④a	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm ± 0,1
1	2	3	4	5	6	7	8	
1250	102,5-113,5 (100,5-105,5)	1290-1300*	800	95,5- 98,5 (93,5-100,5)	100	134,25-144,25	1250	11,5
			500	max. 94,0	250	7,0 mm RW	900	11,0
							500	11,2
						100-170 (80-190)		./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

852DR

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1275 1500	14,4-17,4 0 - 1	-	-	-	ca. 13	100 250 310-370 450	min. 7,2 5,6-5,8 = 2,0 0-1	200 700 1200	0,5-1,2 4,4-4,8 8,3
ca. 44	10,5 4,0	1290-1300 1350-1380				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point	Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	9
1250	101,5-102,5 (99,5-104,5)	1290-1300*	500	78,0 - 86,0 (76,0 - 88,0)	100 250 100-170 (80-190)	18,0-18,6 7,0	

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point	Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4

2. Edition

En

PES 6 A 90 D 410 RS 2340 RQV 275-1200 AB 972 L (1)
250-1300 AB 961 DL (2)

supersedes 10.77
company: OM Brescia
engine: CP3/100-136PS
CP3/130

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (1) cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm min ⁻¹ 6
1200	10,9	7,5 - 7,7	0,3(0,45)	10,3-10,4	7,4 - 7,6	-n 1300
275	(+0,1) 8,0-8,2	0,7 - 1,1	0,2(0,4)	7,8-8,0	0,9 - 1,5	-n 250
1100/500		C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

275-1200 AB 972 L

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1250 1550	15,0-18,0 0 - 1	-	-	-	ca. 16	100 275 530-600 800 300-600	min. 9,7 8,0-8,2 =2,0 0 - 1	300 800 1260	0,8-1,8 3,8-4,2 8,2
ca. 64	9,9 4,0	1240-1250 1325-1335				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1200	75,5-76,5 (73,5-78,5)	1240-1250*				100	14,7-15,3		
						100-195(80-215)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1340 1550	15,2-17,8 0 - 1,0	-	-	-	ca. 21	100 250 790-850=	min. 11,5 9,9-10,1 2,0	200 600 1350	0,4-1,5 3,5-4,0 8,2
ca. 61	9,3 4,0	1340-1350 1430-1460				3a	1050 250-650	0 - 1		

Torque control travel a = 0,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1300	74,5-75,5 (72,5-77,5)	1350-1350*	1100	74,0-76,0 (72,0-78,0)	100	109,25- 119,25	1300	10,8-10,4	
			500	61,5-63,5 (59,5-65,5)	100-170(80-190)		500	10,5-10,6	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7v2

2. Edition

En

PES 6A 90D 410RS 2596 RQV 300-1400 AB1066-DL

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300 ± 0,50 (0,75)

supersedes 4.80
company: Daimler-Benz
engine: OM 352A
126 kW(171 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(1,95-2,15)
Port closing at prestroke 2,00-2,10) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	13,1+0,1	7,6 - 7,7	0,3(4,5)			
300	8,9-9,1	1,1 - 1,7	0,2(0,4)			
500/500	-	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1800	15,2-17,8 0-1	-	-	-	ca. 16	100 300 740-800	min. 10,5 8,9-9,1 =2,0	300 500 1450	1,2 2,5-2,7 8,6
ca. 62	12,1 4,0	1440-1450 1595-1625				400-470 3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9 +0,2
LDA 1400	0,7 bar 76,5-77,5 (74,5-79,5)	1440-1450*	LDA 500	0,7 bar 72,5-74,5 (70,5-76,5)	100	72,25-82,25	1400 1225 1050 500	13,1 13,4 14,0 14,3
			LDA 500	0 bar 58,0-60,0 (56,0-62,0)	100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2
8.80

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v 2

-2-

Pump/governor	Setting	Measurement	Control rod travel ^{diminution} difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2596 with 1066-1DL	0,7	0,35	14,3 - 14,4
		0,225	14,0 - 14,1
		0	13,4 - 13,6
			13,0 - 13,1

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 v

3. Edition

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1066 DL

supersedes 3.80
company: Daimler-Benz
engine: OM 352 A
(124 kW(169 PS))

1 - 5 - 3 - 6 - 2 - 4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,00-2,10}{(1,95-2,15)}$ mm (from BDC) Cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,9-13,0	7,1 - 7,2	0,3(0,45)			
500/500	8,2-8,4 -	0,9 - 1,5 C. 4-5	0,2(0,4) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca. 15	100 300 730-790 = 2,0	min. 9,8 8,2-8,4	300 485 1470	1,2-1,3 2,4-2,6 8,3
ca. 60	11,9 4,0	1440-1450 1575-1605				400-460 ③a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 + 0,2
LDA 1400	0,7 bar 71,5-72,5 (69,5-74,5)	1440-1450	LDA 500	0,7 bar 70,5-72,5 (68,5-74,5)	100	72,25-82,25	1400	12,9
			LDA 500	0 bar 56,0-58,0 (54,0-60,0)	100-220(80-240)		1225	13,2
							1050	13,7
							500	14,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

6.80

A23

A23

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D. Adjustment Test for Manifold Pressure Compensator

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v

-2-

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2596 with 1066	0,7	0,35 0,23 0	14,1 - 14,2 13,8 - 13,9 13,2 - 13,4 12,8 - 12,9

Notes:

(1) when n = rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 v 2

3. Edition

En

PES 6 A 90 D 410 RS 2596 RQV 300-1400 AB 1066-1DL

1 - 5 - 3 - 6 - 2 - 4

0 -60-120-180-240-300 ± 0,50 (0,75)

supersedes 8.80

company: Daimler-Benz

engine: OM 352 A

126 kW (171PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15)
2,00-2,10 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4±0,1	7,6 - 7,7	0,3(4,5)			
300	8,9-9,1	1,1 - 1,7	0,2(0,4)			
500/500	-	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca.68	1400 1800	15,2-17,8 0 - 1	-	-	-	ca.16	100 300	min.10,5 8,9-9,1	300 500	1,2 2,5-2,7
ca.62	11,4 4,0	1440-1450 1575-1605				400-470 (3a)	740-800= 2,0		1450	8,6

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 +0,2
LDA 1400	0,7 bar 76,5-77,5 (74,5-79,5)	1440-1450*	LDA 500	0,7 bar 72,5-74,5 (70,5-76,5)	100	72,25-82,25 15,8 - 16,2 RW	1400 1225 1050 500	12,4 12,7 13,3 13,6
			LDA 500	0 bar 58,0-60,0 (56,0-60,0)	100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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10.80

B5

B5

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v 2

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2596 with 1066-1 DL	0,7	0,35 0,225 0	13,6 - 13,7 13,3 - 13,4 12,7 - 12,9 12,3 - 12,4

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 p 4

2. Edition

En

PES 6 A 95 D 410 LS 2542

RQV 250-1100 AB 956 L

supersedes 10.79

company: M A N

engine: D 2566 ME
(177 kW 241 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	12,6 - 12,8	0,3(0,6)			
250	5,9-6,1	0,9 - 1,5	0,3(0,5)			
500	---	C. 4-5				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1100 1300	15,2-17,8 0 - 1				ca. 10	100 250 320-380 500	min. 7,5 5,9-6,1 = 2,0 0 - 1	200 600 1120	0,4-1,2 4,2-4,4 8,3
ca. 48	11,0 40	1140-1150 1180-1210				3a				

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	124,5-126,5 (122,5-128,5)	1140-1150*	500	max. 113,5 (max. 115,5)	100	124,0-134,0		
						100-170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

En

PE 6 A 85 D 320 RS 2466 EP/RSV250-1300 A1B514R,781R (1)
250-1200 A1B514R (2)
250- 900 A7B566R

superseries 8.76
company: D A F
engine: DF 615 (1)
DD 575 (2)

Testing with "B" leads - cold-start test 781R, see page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1 (RW9)

mm (from BDC)

Port closing difference between
control-rod travel 9 and 21 3 - 4

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,2 - 4,5	0,4			
200	6 12 9	1,3 - 2,0 7,4 - 8,2 2,4 - 3,1				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

250-1300

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 72	1300 1340 1380	16,0 11,2 5,7	without auxiliary spring			ca. 26	250	6,0	400	0
⑤	1360 1400 1500	7,0-10,0 2,2- 5,4 0,3- 1					100 250 300 440	19 - 21 5,7-6,3 3,8-4,8 0 - 1	290	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1000	54,5-56,5 (53,0-58,0)	1340-1350*			100	max. RW	250	6,0	./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 72	1300	16,0	without auxiliary spring			ca. 26	250	6,0	400	0
	1340	11,2					100	19 - 21		
	1380	5,7					250	5,7-6,3		
②a	1360	7,0-10,0	with auxiliary spring				300	3,8-4,8	290	1,2-1,8
	1400	2,2- 5,4					440	0 - 1		
	1500	0,3- 1								

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
(2)	Pay attention to engine-speed and quantity reduction on nameplate with engine DD 575!					100	max. RW	250	6,0

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

250-900

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 57	900	16,0	without auxiliary spring			ca. 24	250	6,0	600	0
	930	11,6					100	19 - 21		
	960	6,0					250	5,7-6,3		
②a	950	5,2-9,6	with auxiliary spring				300	2,4-4,0	370	1,2-1,8
	970	2,2-6,0					370	0 - 1		
	1020	0,3-1,0								

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ ④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
In accordance with special nameplate on pump!						100	max. RW	250	6,0
940-950*									./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

En

DAF 6.2 e

Testing of cold-start device - governor 781R:
Pump not driven. Test disengaging force with spring scale at control rod. Test specification 3.5 ± 0.3 kp.
With pump being driven at idle speed, position stop screw of holder such that control rod is advanced to 20.5 ± 0.5 mm control point when cold-start device is operated. Then increase speed and observe when control rod disengages from start control point. Disengaging speed must be between $n = 800$ and 1000 min^{-1} .

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4 MAN 9,7 p

2. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 RS 2128

EP/RSV 250-1100 A1 B 1089 DL

supersedes

company: MAN

engine: D 2156 MTN 5
(256 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,95 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,5 - 8,0				
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 60	1100 1140 1180	16,0 12,0 7,0	without auxiliary spring			ca. 25	250	6,0	1100	0
⑤	1100 1225 1320	ca 12,4 ca 4,0 0,3 - 1,0					100 250 400 580	19 - 21 5,7-6,3 1,8-3,9 0 - 1	400	0,2-0,4

The numbers denote the sequence of the tests

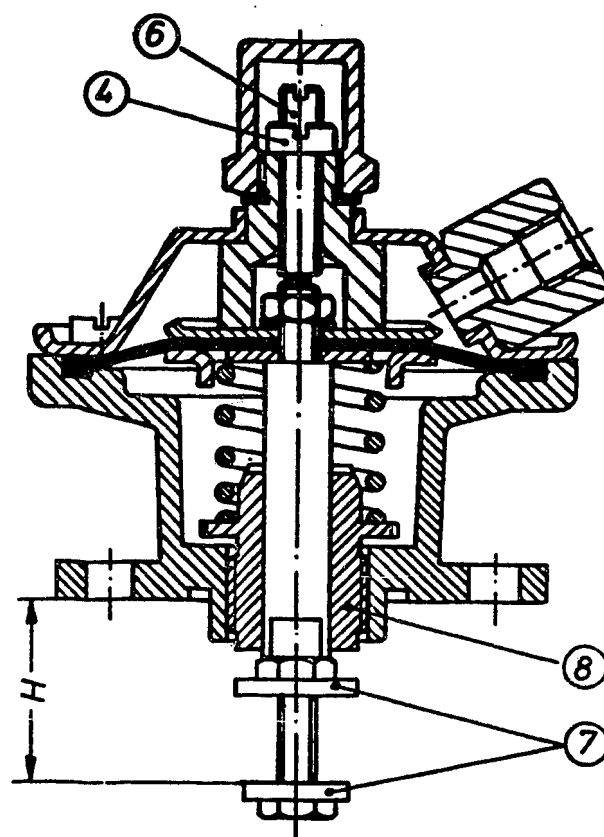
C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min						Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2		3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	9
LDA 1100	0,5 bar 127,5 - 129,5		1140-1150 *	LDA 800	0,5 bar 131,0 - 134,0	100	15,5 - 16,5	250	6,0
				LDA 500	0 bar 80,5 - 84,5				./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

EP/RSV with manifold-pressure compensator (LDA)



1. Perform basic adjustment of pump and setting of governor without LDA as described in WPP 001/4 and 1st Supplement.

Set full-load delivery - quantity indication with charge-air pressure - at full-load stop screw of governor.

2. Pre-adjust LDA:
 Unscrew upper stop screw (6) until diaphragm makes contact.
 Then pre-tension to 0.5 mm.
 In this position, set dimension $H = 22.5 \text{ mm}$ at screw with lock nut (7).

3. Further settings are to be performed accordingly in line with WPP 001/4 7th Supplement as of Fig. 14:

Re Fig. 14 -

Only fit LDA; stop plate not necessary since testing can be performed with solenoid fitted.

Re Fig. 15 -

Only set delivery at 0 kp/cm^2 at adjusting nut (4).

Re Fig. 16 -

Adjustment not necessary; fit closure cap.

Re Figs. 17 - 19 -

Section D (max. pressure = 0.5 bar); adjustment test at $n = 700 \text{ min}^{-1}$ - decreasing pressure - ; adjust in accordance with Page 2 at nut (8).

Re Figs. 20 - 24 -

Accordingly - pay attention to 24 V solenoid with Fig. 22!

D. Adjustment Test for Manifold Pressure Compensator

MAN 9,7p -2-

Test at n = 700 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- ^{diminution}
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2128 with 1089 DL	0,29	0,11	0,2 - 0,3 1,4 - 1,8

Notes:

(1) when n = 800 rev/min and gauge pressure = 0,5 bar (= maximum full-load control rod travel)

①

Test Specifications Fuel Injection Pumps ① and Governors

40

VDT-WPP 001/4

1. Edition

En

PES 8 A 75 D 320 RS 2463 RQV 300-1500 AB 912D (1)
913D (2)
914D (3)

supersedes -
company: IHC
engine: DV 550C
(1 - 180 PS)*
(2 - 160 PS)*
(3 - 200 PS)*

Inlet pressure 2,5 bar (1) See note 1,2,3 -page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,3)

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500	9,7	5,6 - 6,2	0,3			
1000	(± 0,05)	4,8 - 5,5				
		0,1 - 1,4 -	-(Cyl. 1 - 4 - 6 - 7)			
300	ca.6,3	3,5 - 4,1 -	-(Cyl. 2 - 3 - 5 - 8)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

RQV .. 912 D (1)*

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1600	15,0-18,2	-	-	-	ca.10	250	0,5-8,2	1600	8,3
	2000	0					400	2,9-4,5		
ca.65	1500	15,0-17,6					500	2,3-3,3	1500	0
	1600	10,0-14,0					650	1,1-2,1		
	1700	4,6-10,4					860	0	700	0,3-0,4
	1940	0				3a				

Torque control travel a = 0,3 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1500	59,0-60,0	1600-1610*	1000	51,0-53,0	100	111,5-134,5)	Cyl. 2-3-5-8	
		1650:			300	17,5- 18,5		
		7-8mm RW			100	0)	Cyl. 1-4-6-7	
		Change-over point			300	0)		
		150-230 U/min						
		(130-250)						

Checking values in brackets

* 1 mm less control rod travel than col. 2

B18

318

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4.75

B. Governor Settings

RQV..913 D RQV..913 D (2)* IHC-Ppe2463

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1600	15,0-18,2	-	-	-	ca. 10	250	6,5-8,2	1600	8,3
	2000	0					400	2,9-4,5		
ca. 65	1500	15,0-17,6					500	2,3-3,3	1500	0
	1600	10,0-14,0					650	1,1-2,1	700	0,45-
	1700	4,6-10,4					860	0		0,65
	1940	0				(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1500	50,0-51,0 (9,35mmRW)	1600-1610*	1000	47,0-49,0	100	111,5-134,5	Cyl. 2-3-5-8	
		1650:			300	17,5- 18,5		
		7-8mm RW			100	0	Cyl. 1-4-6-7	
					300	0		
Change-over point 150-230 U/min (130-250)								

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

RQV..914D (3)*

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1600	15,0-18,2	-	-	-	ca. 10	250	6,5-8,2	1600	8,3
	2000	0					400	2,9-4,5		
ca. 65	1500	15,0-17,6					500	2,3-3,3		
	1600	10,0-14,0					650	1,1-2,1		
	1700	4,6-10,4					860	0		
	1940	0				(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1500	67,0-68,0 (10,7mmRW)	1600-1610*			100	111,5-134,5	Cyl. 2-3-5-8	
		1650:			300	17,5- 18,5		
		7-8mmRW			100	0	Cyl. 1-4-6-7	
					300	0		
Change-over point 150-230 U/min (130-250)								

Checking values in brackets

* 1 mm less control rod travel than col 2

En

Testoil-ISO 4113

- (1) Supply pressure 2.5 bar
- (2) Barrel 1: Start of dely. at CRT 10.7 = $1.95 + 0.05$ mm - cyl. 1-7-6-4 (90° each)
Barrel 2: Port opening at CRT 10.7 = $3.95 + 0.05$ mm - cyl. 2-8-3-5 (90° each)
- (3) In start-of-delivery position of barrel 1 at CRT 10.7 mm, use setting device to position jaws of coupling horizontally and tighten screws to 25 - 30 N !

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4 KHD 6,1 a
2. Edition

En

PES 6 A 85 D 410/3 RS 2366 EP/RSV 325-1400 A8B674D, 707D
325-1150 A8B674D, 707D
RS 2415
EP/RS 325/1325 A0B691D, 709D
supersedes
company
engine
5.74
K H D
BF 6 L 913

See page 3 - 4! RS 2532

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,4			
200	6	0,6 - 1,4				
	9	1,4 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV 325-1400 A8B674D, 707D

1 Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4			4 Lower rated speed Control-lever deflection in degrees 7			3 Torque control Control rod travel rev/min mm 10 11	
Control rod travel mm 2	Control rod travel mm rev/min 3					rev/min 8	Control rod travel mm 9			
ca. 69	1400 16,0 1450 10,5 1500 4,0		without auxiliary spring			ca. 20	325 5,5	1400	0	
ca. 68	1400 ca. 10,0 1510 ca. 4,0 1600 0,3-1,5						200 19 - 21 325 5,2-5,8 500 1,2-3,3 650 0 - 1,5	500	1,2-1,4	
2a			with auxiliary spring							

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp. 40°C (104°F) rev/min 1		6 Rotational-speed limit Note: changed to) rev/min 3		3a Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle rev/min 6		4a Idle stop Control rod travel mm 9	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7			
LDA	0,7 bar			LDA	0,7 bar				
***		***		*** LDA	0 bar	100	119,5-129,5	325	5,5**
				500	43,5-47,5				
(increase by ± 1,0 cm ³ !)								./.	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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B21

321

11.77

The numbers denote the sequence of the tests

B. Governor Settings

EP/RSV 325-1150 A8B674D, 707D

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 56	1150	16,0	without auxiliary spring			ca. 21	325	5,5	1130	0
	1200	11,1					200	19 - 21		
	1250	5,4					325	5,5-5,8		
	1220	7,5-10,4	with auxiliary spring				500	1,4-3,4	500	1,0-1,2
	1300	1,3- 3,6					660	0 -1,5		
	1380	0,3- 1,5								
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
LDA	0,7 bar			LDA	0,7 bar	100	119,5-129,5	325	5,5**
***		***		***					
See page 3 - 4!				LDA	0 bar				
				500	43,5-47,5				

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RS 325/1325 A0B691D, 709 D

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control-lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
VH ca. 70 FH max.	1325	15,8-16,4	- - -				325	8,3	1300	0
	1400	12,1-13,1					270	9,0-9,8		
	1480	7,4- 8,8					400	6,0-6,8		
	1550	2,8-4,8					550	3,5-4,0	1000	0,8-1,0
	1620	0					900	3,3-3,9		
②a							1200	2,4-3,0	600	1,2-1,4
							1400	0		

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤ Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
LDA	0,7 bar			LDA	0,7 bar	100	119,5-129,5		
***		***		***					
				500	43,5 - 47,5				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

-3-

KHD 6,1 a

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
all governors	0,38 _i	0,10	0,2 - 0,3 1,6 - 2,0

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

NOTES:

1. ** Single-lever operation in the case of Liebherr excavators; therefore use shorter screw 1 423 400 031 and set it to 0.3 - 1.0 before stop.
2. - Test EP/RS governor in accordance with WPP 001/4 KHD 1 c.
3. - Perform LDA (manifold-pressure compensator) adjustment in accordance with W 420/305.
4. - Dimension H = 22.5 mm - basic setting of LDA.

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

BF 6 L 913 - PES 6 A D..RS2366, 2415 -F- or B-power output / .. rev/min

1400	88,0-90,0	1420	800	80,0-83,0	160 PS	/	n = 2800
1400	84,0-86,0	1420	800	66,0-69,0	142 PS	/	n = 2800
1325	87,5-89,5	1340	800	82,5-85,5	160 PS	/	n = 2650
1325	82,5-84,5	1340	800	66,0-69,0	140 PS	/	n = 2650
1250	87,0-89,0	1270	800	84,5-87,5	160 PS	/	n = 2500
1250	83,0-85,0	1270	800	76,0-79,0	148 PS	/	n = 2500
1250	81,0-83,0	1270	800	69,5-72,5	140 PS	/	n = 2500
1200	86,0-88,0	1220	800	84,5-87,5	156 PS	/	n = 2400
1200	78,0-80,0	1220	800	68,0-71,0	135 PS	/	n = 2400
1165	84,0-86,0	1180	800	84,5-87,5	152 PS	/	n = 2330
1150	83,5-85,5	1165	800	84,5-87,5	152 PS	/	n = 2300
1150	80,0-82,0	1165	800	72,0-74,0	142 PS	/	n = 2300
1100	82,0-84,0	1115	800	84,5-87,5	147 PS	/	n = 2200
1075	82,0-84,0	1090	800	84,5-87,5	144 PS	/	n = 2150
1075	78,0-80,0	1090	800	76,0-79,0	136 PS	/	n = 2150
1050	76,5-78,5	1065	800	73,5-76,5	130 PS	/	n = 2100
1000	82,5-84,5	1015	800	84,5-87,5	137 PS	/	n = 2000
1000	77,0-79,0	1015	800	72,0-75,0	130 PS	/	n = 2000
900	82,0-84,0	910	800	84,5-87,5	125 PS	/	n = 1800
875	68,0-70,0	885	800	66,0-69,0	106 PS	/	n = 1750
750	85,0-87,0	760	-	-	105 PS	/	n = 1500
750	78,0-80,0	760	-	-	100 PS	/	n = 1500

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4
2. Edition

En

PE 12 A 90 D 521 RS 2431 RQV325-1500 AB876

F,G,H,I,J, ./.

1 - 4 - 9 - 8 - 5 - 2 - 11 - 10 - 3 - 6 - 7 - 12
0 - 15-60-75-120-135-180-195-240-255-300-315°

Testing with "B" leads

supersedes 9.75
company: Baudouin
engine: DF 12

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{pmatrix} 2,15-2,25 \\ (2,10-2,30) \end{pmatrix}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,1 - 3,5	0,4			
	6	0,5 - 1,2				
	12	5,6 - 7,4				
200	9	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

RQV .. 876

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1510 1580 1700 1800	15,0-18,0 9,3-14,2 0 - 7 0	-	-	-	ca. 12	200 400 600 920	7,2-8,2 2,6-4,5 1,6-3,3 0	1510	8,3
						③a			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		Rotational-speed limitation intermediate speed (2b) (4a)	Fuel delivery characteristics (5a) high idle speed (5b)		Starting fuel delivery idle switching point (6)		Torque-control travel (5) Control rod travel mm	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
1300	54,5-56,5	1540-1550*			-	-		
					325	8,25-14,25		
					Change-over point 200-275 min ⁻¹			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F

1300 53,0 - 55,0 1540-1550*

G

1300 57,5 - 59,5 1540-1550*

H

1300 64,5 - 66,5 1540-1550*

I

1300 71,5 - 73,5 1540-1550*

J

1300 97,5 - 99,5 1540-1550*

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 6,2 c

3. Edition

En

PES 6 A 90 D 320/3 RS2393 EP/RSV 300-1000 A7 B529DR
RS2464 325-1500 A2

supersedes 4.75

company: M W M

engine: TD 226-6

As from FD 821 the idle auxiliary-spring has been changed
from 1 424 641 000 to ... 001. New values enclosed.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	9	5,1 - 5,5	0,4			
	6	1,6 - 2,6				
200	9	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

RSV 300-1000

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
ca.68	1000 1050 1100	16,0 8,5 2,4	without auxiliary spring			ca.28	300	5,5		
⑤ ca.67	1030 1070 1120	8,0-9,0 2,0-4,0 0,3-1,0					100 300 450	19 - 21 5,7-6,3 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.	③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel
rev/min	cm ³ /1000 strokes	3	4	5	6	7	8	mm
1	2							9
See page 3 - 4!								

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min					rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 58	1500	16,0	without auxiliary spring			ca. 20	325	5,5	-	-
	1580	9,0					100	19 - 21		
	1630	4,2					325	5,7-6,3		
ca. 56	1530	8,0-9,0	with auxiliary spring				420	1,4-3,4		
②a	1580	3,0-4,0					520	0 - 1		
	1620	0,3-1,0								

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9
See page 3 - 4!									

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min					rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
②a										

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min	cm³/1000 strokes	rev/min		rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	Control rod travel mm
1	2	3		4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F150	PS / 2500	min ⁻¹						
1250	87,0-89,0	1270	800	84,0-87,0				
B143	PS / 2500	min ⁻¹						
1250	84,0-86,0	1270	800	79,5-82,5				
F148	PS / 2400	min ⁻¹						
1200	86,0-88,0	1220	800	84,0-87,0				
B141	PS / 2400	min ⁻¹						
1200	82,0-84,0	1220	800	79,5-82,5				
F146	PS / 2300	min ⁻¹						
1150	84,0-86,0	1170	800	84,0-87,0				
B139	PS / 2300	min ⁻¹						
1150	81,0-83,0	1170	800	79,5-82,5				
A125	PS / 2300	min ⁻¹						
1140	80,0-83,0	-----	1150	74,0-76,0				
F143	PS / 2200	min ⁻¹						
1100	84,0-86,0	1120	800	84,0-87,0				
B137	PS / 2200	min ⁻¹						
1100	81,0-83,0	1120	800	79,5-82,5				
A134	PS / 2200	min ⁻¹						
1090	80,5-83,5	-----	1100	74,0-76,0				
F 140	PS / 2100	min ⁻¹						
1050	85,0-87,0	1070	800	84,0-87,0				
B134	PS / 2100	min ⁻¹						
1050	82,0-84,0	1070	800	79,5-82,5				
A122	PS / 2100	min ⁻¹						
1040	80,5-83,5	-----	1050	76,0-78,0				
F135	PS / 2000	min ⁻¹						
1000	86,0-88,0	1020	800	84,0-87,0				
B130	PS / 2000	min ⁻¹						
1000	81,0-83,0	1020	800	79,5-82,5				
A119	PS / 2000	min ⁻¹						
990	80,5-83,5	-----	1000	73,0-75,0				
B123	PS / 1800	min ⁻¹						
900	82,0-84,0	910	750	78,5-81,5				
A112	PS / 1800	min ⁻¹						
890	89,5-92,5	-----	900	75,0-77,0				
B110	PS / 1500	min ⁻¹						
750	86,0-88,0	760	650	74,0-77,0				

-A 100 PS see page 4 -

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

A 100	BHP at 1500 min/1		
740	87.5 - 90.5	----- 750	86.0 - 88.0

The nameplate described on MWM 1.5 a has recently been expanded - in columns n = rotational speed and Q = full-load fuel delivery - to include two rotational speeds and two fuel deliveries, to enable more exact adjustment in the case of regulators with torque control.

Accordingly - in deviation from VDT-WPP 001/4, 1st addendum, Adjustment of the Regulator and the Pump - the following points will apply:

- (1) Adjustment of the control spring: remains.
- (2) Adjustment of the full-load fuel delivery: in accordance with nameplate, n = (1st rotational speed) and Q = (1st fuel delivery), or according to Sect. C, Columns 1-2.
- (3) Adjustment of the torque control: is adjusted until the control-rod travel is changed as indicated in (2), or according to the new nameplate, until the 2nd fuel delivery is obtained at the 2nd rotational speed; or accordance with Section C, Columns 4-5.
- (6) Start of speed regulation: is readjusted according to the nameplate n = (1st rotational speed + 20 min/1) or Column 3.
However, for A-power output: readjust until the fuel delivery as shown in Columns 4-5 has been attained.

New pumps from the warehouse in Stuttgart do not have the spring retainer! For that reason, use the old spring retainers, or order new ones from MWM in accordance with the old nameplate!

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 3,8 g

3. Edition

En

PES 4 A 90 ^C_D 410 RS2294 RQV 300-1425 AB740,768 (1)
 RS2294 RQV 300-1425 AB780,781 (2)
 RS2294 RQV 300-1400 AB836,884 (3-4)

supersedes 12.74
 company: Daimler-Benz
 engine: OM 314
 (85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,5 5,0	0,4			
200	6 12 9	1,8 - 2,6 7,3 - 8,2 2,0 - 2,8				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

RQV..740,768 (1)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1500 1550 1650 1790	16,0-19,4 11,6-16,0 8,2-13,4 1,4- 8,0 0				ca. 10	100 300 450 600 760	6,6-7,8 4,9-6,4 3,0-4,2 1,3-2,8 0	400 1425 -	1,4-2,2 8,1 -
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
(1) 1400 (increase by ± 1,5 cm ³ !)	63,0-65,0	1460-1470*			100 Change-over point 180+250 min ⁻¹	72,25-82,25	768 See page 4	./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.77

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C7

C7

B. Governor Settings

RQV..780, 781 (2)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1425 1500 1600 1650 1770	16,0-19,0 10,8-15,3 3,3-10,0 0 - 7,4 0				ca. 10	200 300 450 600 770	6,0-7,4 4,9-6,6 3,0-3,9 1,4-2,8 0	400 1425	1,2-2,2 8,3
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
(2) 1400	63,0-65,0	1460-1470*			100	72,25-82,25	700 1300	780 781
					Change-over point 180-250 min ⁻¹			

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

RQV..836 (3)

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1440 1780	15,0-18,0 0				ca. 12	150 250 400 600 760	7,2-8,2 6,2-7,4 3,7-5,1 1,5-2,8 0	400 1440	1,4-2,0 8,3
ca. 67	1400 1500 1600 1760	15,0-17,7 8,4-13,4 1,5- 8,5 0				(3a)			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
(3) 1400	63,0-65,0	1460-1470*			100	72,25-82,25	1300	./.
					Change-over point 180-250 min ⁻¹			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1440 1550 1680 1820	15,0-17,6 8,4-12,8 0 - 6,6 0	-	-	-	ca. 15	200 300 450 600 770	6,4-7,8 5,3-6,6 3,0-4,6 1,6-2,8 0	400 1440	1,4-2,0 8,3
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
(4) 1400	63,0-65,0	1460-1470*			100	72,25-82,25		
					180-250			

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						(3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

MB 3.8 g

Setting of air-operated intermediate-speed stop (768):

Start of adjustment 0.2 bar

End of adjustment 3.0 bar

$n = 650 \text{ min}^{-1}$ - approx. CRT 5 = $16.25\text{--}18.25 \text{ cm}^3/1000 \text{ strokes}$ at 3.0 bar
(adjust with adjusting screw at lever shaft).

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 1,5 b

3. Edition

En

PES 2 A 75^C 320 RS1164, 1244 EP/RSV ..A2B398DR
 3 RS1165, 1245 EP/RSV ..A7B407DR
 4 RS1166, 1246 ..A7B505DR
 6 RS1167 EP/RSV ..A2B407DR
 ..A2B505DR

supersedes 4.68
 company: MWM
 engine: D 208 - 2
 3
 4
 D 308 6

-320/3-

Instructions P. 3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,45 + 0,1 mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,2 - 6,6	0,4			
200	9 9	3,2 - 3,7 1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

300-1300 A2B398DR

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
⑤	ca.49	1300	without auxiliary spring			ca.18	300	6	See note	
		1350								
		1400								
		1380	7,4-9,8 *				100	19 - 21		
		1480	1,8-4,1				300	5,7-6,3		
	1600	0,3- 1	with auxiliary spring			500	1,5-3,6			
						700	0 - 1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	3	4	cm ³ /1000 strokes 5	6	cm ³ /1000 strokes 7	8	rev/min 9	Control rod travel mm 9
See page 4									./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.77

E1

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Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel Torque-control travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11

300-1500 A2B398DR

ca.58 1500 16,0
 1550 11,9 *
 1600 7,0
 1580 7,4-10,6
 1650 3,4- 6,5 **
 1820 0,3- 1

ca.19 300 6
 100 19 - 21
 300 5,7-6,3
 450 3,2-4,5 ***
 700 0 - 1

300-900 A7B407DR

ca.60 900 16,0
 940 11,2 *
 970 7,0
 950 8,5-11,0
 1020 2,0- 4,5
 1100 0,3- 1 **

ca.27 300 6,0
 100 19 - 21
 300 5,7-6,3
 450 1,0-3,3 ***
 600 0 - 1

300-1000 A7B407DR, 505DR

ca.68 1000 16,0
 1040 10,8 *
 1070 6,0
 1050 7,4-10,6
 1100 3,0- 5,0 **
 1200 0,3- 1

ca.28 300 6,0
 100 19 - 21
 300 5,7-6,3 ***
 400 3,0-4,4
 580 0 - 1

325-1500 A2B407DR, 505DR

ca.58 1500 16,0
 1550 11,6 *
 1600 7,0
 1580 7,5-10,0
 1650 3,1- 5,3 **
 1800 0,3- 1

ca.20 325 6,0
 150 19 - 21
 325 5,7-6,3 ***
 500 2,0-3,9
 700 0 - 1

* without auxiliary spring

** with auxiliary spring

*** See note

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
32 PS / 2100 min⁻¹ - D 208 - 3 - Farmer 2 D -								
1050	39,0-40,0	1070	700	44,0-46,0				
32 PS / 1950 min⁻¹ - D 308 - 3 - 231 GT -								
975	39,0-40,0	990	700	44,0-46,0				
38 PS / 2600 min⁻¹ - D 208 - 3 - Farmer 2 -								
1300	41,0-42,0	1320	700	41,0-43,0				
45 PS / 2075 min⁻¹ - D 208 - 4 - Farmer 3 S -								
1030	41,0-42,0	1050	700	46,0-48,0				
55 PS / 2300 min⁻¹ - D 208 - 4 - Favorit 3 -								
1150	45,0-46,0	1170	700	47,0-49,0				
55 PS / 2400 min⁻¹ - D 208 - 4 - Farmer 4 S								
1150	46,0-47,0	1200	700	48,0-50,0				
80 PS / 2300 min⁻¹ - D 208 - 6 - Favorit 4 -								
1150	44,0-45,0	1170	700	47,0-49,0				

Notes:

The nameplate described on MWM 1.5 a has recently been extended in column n = (engine speed) and Q = (delivery) to include 2 engine speeds and 2 injected-fuel quantities, so as to be able to effect more precise adjustment in the case of governors with torque control.

As opposed to WPP 001/4, adjustment of governor (torque control) and full-load delivery with fuel-delivery characteristics, the following items apply:

- (2) Adjustment in accordance with nameplate n = (1st engine speed) and Q = (1st injected-fuel quantity); or in accordance with columns 1 and 2*.
- (3) Is adjusted until there is a change in control-rod travel as read off under (2) or (with new nameplate) until 2nd injected-fuel quantity is reached at 2nd engine speed; or in accordance with columns 4 and 5*.
- (6) Is adjusted in accordance with nameplate n = (1st engine speed + 20 min⁻¹); or column 3*

* The full-load data - arranged according to engine types - apply - in line with the above note - to repairs performed on Fendt tractor vehicles on which the new nameplate (with 2 engine speeds and injected-fuel quantities) has not yet been introduced.

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 31 PS / 3000 min⁻¹

1500 47,0-49,0 1520

B 30 PS / 3000 min⁻¹

1500 45,0-47,0 1520

A 28 PS / 3000 min⁻¹

1500 47,0-49,0 1520

F 30 PS / 2800 min⁻¹

1400 47,5 - 49,5 1420

B 29 PS / 2800 min⁻¹

1400 46,0-48,0 1420

A 27 PS / 2800 min⁻¹

1400 47,5-49,5 1420

F 29 PS / 2600 min⁻¹

1300 49,0-51,0 1320

B 28 PS / 2600 min⁻¹

1300 47,5-49,5 1320

A 26 PS / 2600 min⁻¹

1300 49,0-51,0 1320

F 28 PS / 2500 min⁻¹

1250 48,5-50,5 1270

B 27 PS / 2500 min⁻¹

1250 46,5-48,5 1270

A 25 PS / 2500 min⁻¹

1250 48,0-50,0 1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 27 PS / 2400 min⁻¹

1200 47,5-49,5 1220

B 26 PS / 2400 min⁻¹

1200 46,0-48,0 1220

A 24 PS / 2400 min⁻¹

1200 47,0-49,0 1220

F 26 PS / 2300 min⁻¹

1150 46,5-48,5 1170

B 25 PS / 2300 min⁻¹

1150 44,5-46,5 1170

A 23 PS / 2300 min⁻¹

1150 45,5-47,5 1170

F 25 PS / 2200 min⁻¹

1100 44,0-46,0 1120

B 24 PS / 2200 min⁻¹

1100 42,0-44,0 1120

A 22 PS / 2200 min⁻¹

1100 43,5-45,5 1120

F 24 PS / 2100 min⁻¹

1050 43,5-45,5 1060

B 23 PS / 2100 min⁻¹

1050 41,0-43,0 1060

A 21 PS / 2100 min⁻¹

1050 42,0-44,0 1060

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 23 PS / 2000 min⁻¹

1000 42,5-44,5 1060

B 22 PS / 2000 min⁻¹

1000 40,0-42,0 1060

A 20 PS / 2000 min⁻¹

1000 41,0-43,0 1060

B 20 / 1800 min⁻¹

900 41,0-43,0 910

A 18 PS / 1800 min⁻¹

900 41,0-43,0 910

B 16 PS / 1500 min⁻¹

750 39,5-41,5 760

A 15 PS / 1500 min⁻¹

750 41,0-43,0 760

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46,5 PS / 3000 min⁻¹

1500 46,5-48,5 1520

B 45 PS / 3000 min⁻¹

1500 45,0-47,0 1520

A 42 PS / 3000 min⁻¹

1500 46,0-48,0 1520

F 45 PS / 2800 min⁻¹

1400 46,5-48,5 1420

B 43,5 / 2800 min⁻¹

1400 45,0-47,0 1420

A 40,5 PS / 2800 min⁻¹

1400 45,5-47,5 1420

F 43,5 / 2600 min⁻¹

1300 47,5-49,5 1320

B 42 PS / 2600 min⁻¹

1300 45,5-47,5 1320

A 39 PS / 2600 min⁻¹

1300 47,0-49,0 1320

F 42 PS / 2500 min⁻¹

1250 46,5-48,5 1270

B 40,5 PS / 2500 min⁻¹

1250 44,5-46,5 1270

A 37,5 PS / 2500 min⁻¹

1250 45,5-47,5 1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 40,5 PS / 2400 min⁻¹

1200 46,0-48,0 1220

B 39 PS / 2400 min⁻¹

1200 44,0-46,0 1220

A 36 PS / 2400 min⁻¹

1200 45,0-47,0 1220

F 39 PS / 2300 min⁻¹

1150 44,0-46,0 1170

B 37,5 PS / 2300 min⁻¹

1150 42,5-44,5 1170

A 34,5 PS / 2300 min⁻¹

1150 42,5-44,5 1170

F 37,5 PS / 2200 min⁻¹

1100 41,5-43,5 1120

B 36 PS / 2200 min⁻¹

1100 39,5-41,5 1120

A 33 PS / 2200 min⁻¹

1100 41,0-43,0 1120

F 36 PS / 2100 min⁻¹

1050 41,0-43,0 1060

B 34,5 PS / 2100 min⁻¹

1050 39,0-41,0 1060

A 31,5 PS / 2100 min⁻¹

1050 39,0-41,0 1060

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 34,5 PS / 2000 min⁻¹

1000 40,0-42,0 1010

B 33 PS / 2000 min⁻¹

1000 38,5-40,5 1010

A 30 PS / 2000 min⁻¹

1000 39,5-41,5 1010

B 30 PS / 1800 min⁻¹

900 38,5-40,5 910

A 27 PS / 1800 min⁻¹

900 38,5-40,5 910

B 24 PS / 1500 min⁻¹

750 37,5-39,5 760

A 22,5 PS / 1500 min⁻¹

750 38,0-40,0 760

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 62 PS / 3000 min⁻¹

1500 46,0-48,0 1520

B 60 PS / 3000 min⁻¹

1500 44,5-46,5 1520

A 56 PS / 3000 min⁻¹

1500 45,5-47,5 1520

F 60 PS / 2800 min⁻¹

1400 46,0-48,0 1420

B 58 PS / 2800 min⁻¹

1400 44,0-46,0 1420

A 54 PS / 2800 min⁻¹

1400 46,0-48,0 1420

F 58 PS / 2600 min⁻¹

1300 46,0-48,0 1320

B 56 PS / 2600 min⁻¹

1300 44,5-46,5 1320

A 52 PS / 2600 min⁻¹

1300 45,5-47,5 1320

F 56 PS / 2500 min⁻¹

1250 46,0-48,0 1270

B 54 PS / 2500 min⁻¹

1250 43,5-45,5 1270

A 50 PS / 2500 min⁻¹

1250 44,5 - 46,5 1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 54 PS / 2400 min⁻¹

1200 44,5-46,5 1220

B 52 PS / 2400 min⁻¹

1200 43,0-45,0 1220

A 48 PS / 2400 min⁻¹

1200 44,0-46,0 1220

F 52 PS / 2300 min⁻¹

1150 42,5-44,5 1170

B 50 PS / 2300 min⁻¹

1150 41,0-43,0 1170

A 46 PS / 2300 min⁻¹

1150 42,0-44,0 1170

F 50 PS / 2200 min⁻¹

1100 42,0-44,0 1120

B 48 PS / 2200 min⁻¹

1100 40,0-42,0 1120

A 44 PS / 2200 min⁻¹

1100 41,0-43,0 1120

F 48 PS / 2100 min⁻¹

1050 40,0-42,0 1060

B 46 PS / 2100 min⁻¹

1050 38,5-40,5 1060

A 42 PS / 2100 min⁻¹

1050 39,0-41,0 1060

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col. 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46 PS / 2000 min⁻¹

1000 40,5-42,5 1010

B 44 PS / 2000 min⁻¹

1000 38,5-40,5 1010

A 40 PS / 2000 min⁻¹

1000 39,0-41,0 1010

B 40 PS / 1800 min⁻¹

900 38,5-40,5 910

A 36 PS / 1800 min⁻¹

900 38,0-40,0 910

B 32 PS / 1500 min⁻¹

750 36,5-38,5 760

A 30 PS / 1500 min⁻¹

750 38,5-40,5 760

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col. 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 93 PS / 3000 min⁻¹

1500 45,0-47,0 1520

B 90 PS / 3000 min⁻¹

1500 43,5-45,5 1520

A 84 PS / 3000 min⁻¹

1400 44,5-46,5 1520

F 90 PS / 2800 min⁻¹

1400 45,5-47,5 1420

B 87 PS / 2800 min⁻¹

1400 44,0-46,0 1420

A 81 PS / 2800 min⁻¹

1400 45,0-47,0 1420

F 87 PS / 2600 min⁻¹

1300 45,5-47,5 1320

B 84 PS / 2600 min⁻¹

1300 44,0-46,0 1320

A 78 PS / 2600 min⁻¹

1300 45,5-47,5 1320

F 84 PS / 2500 min⁻¹

1250 45,0-47,0 1270

B 81 PS / 2500 min⁻¹

1250 43,0-45,0 1270

A 75 PS / 2500 min⁻¹

1250 44,0-46,0 1270

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 81 PS / 2400 min⁻¹								
1200	44,0-46,0	1220						
B 78 PS / 2400 min⁻¹								
1200	42,5-44,5	1220						
A 72 PS / 2400 min⁻¹								
1200	43,5-45,5	1220						
F 78 PS / 2300 min⁻¹								
1150	42,5-44,5	1170						
B 75 PS / 2300 min⁻¹								
1150	41,0-43,0	1170						
A 69 PS / 2300 min⁻¹								
1150	41,5-43,5	1170						
F 75 PS / 2200 min⁻¹								
1100	41,0-43,0	1120						
B 72 PS / 2200 min⁻¹								
1100	39,5-41,5	1120						
A 66 PS / 2200 min⁻¹								
1100	40,0-42,0	1120						
F 72 PS / 2100 min⁻¹								
1050	40,0-42,0	1060						
B 69 PS / 2100 min⁻¹								
1050	38,0-40,0	1060						
A 63 PS / 2100 min⁻¹								
1050	39,0-41,0	1060						

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 69 PS / 2000 min⁻¹								
1000	39,5-41,5	1010						
B 66 PS / 2000 min⁻¹								
1000	38,0-40,0	1010						
A 60 PS / 2000 min⁻¹								
1000	38,0-40,0	1010						
B 60 PS / 1800 min⁻¹								
900	36,5-38,5	910						
A 54 PS / 1800 min⁻¹								
900	38,0-40,0	910						
B 48 PS / 1500 min⁻¹								
750	36,5-38,5	760						
A 45 PS / 1500 min⁻¹								
750	38,0-40,0	760						

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46,5 PS / 3000 min⁻¹

1500 49,5-51,5 1520

B 45 PS / 3000 min⁻¹

1500 48,5-50,5 1520

A 42 PS / 3000 min⁻¹

1500 48,5-50,5 1520

F 45 PS / 2800 min⁻¹

1400 50,0-52,0 1420

B 43,5 PS / 2800 min⁻¹

1400 49,0-51,0 1420

A 40,5 PS / 2800 min⁻¹

1400 49,0-51,0 1420

F 43,5 PS / 2600 min⁻¹

1300 49,0-51,0 1320

B 42 PS / 2600 min⁻¹

1300 47,5-49,5 1320

A 39 PS / 2600 min⁻¹

1300 48,5-50,5 1320

F 42 PS / 2500 min⁻¹

1250 48,5-50,5 1270

B 40,5 PS / 2500 min⁻¹

1250 47,0-49,0 1270

A 37,5 PS / 2500 min⁻¹

1250 48,0-50,0 1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col. 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 40,5 PS / 2400 min⁻¹

1200 47,5-49,5 1220

B 39 PS / 2400 min⁻¹

1200 46,5-48,5 1220

A 36 PS / 2400 min⁻¹

1200 47,5-49,5 1220

F 39 PS / 2300 min⁻¹

1150 47,0-49,0 1170

B 37,5 PS / 2300 min⁻¹

1150 45,5-47,5 1170

A 34,5 PS / 2300 min⁻¹

1150 47,0-49,0 1170

F 37,5 PS / 2200 min⁻¹

1100 46,5-48,5 1120

B 36 PS / 2200 min⁻¹

1100 45,0-47,0 1120

A 33 PS / 2200 min⁻¹

1100 46,0-48,0 1120

F 36 PS / 2100 min⁻¹

1050 45,5-47,5 1060

B 34,5 PS / 2100 min⁻¹

1050 44,0-46,0 1060

A 31,5 PS / 2100 min⁻¹

1050 45,5-47,5 1060

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 34,5 PS / 2000 min⁻¹

1000 44,5-46,5 1010

B 33 PS / 2000 min⁻¹

1000 43,5-45,5 1010

A 30 PS / 2000 min⁻¹

1000 44,5-46,5 1010

B 30 PS / 1800 min⁻¹

900 42,0-44,0 910

A 27 PS / 1800 min⁻¹

900 44,0-46,0 910

A 22,5 / 1500 min⁻¹

750 43,0-45,0 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 62 PS / 3000 min⁻¹								
1500	46,5-48,5	1520						
B 60 PS / 3000 min⁻¹								
1500	45,0-47,0	1520						
A 56 PS / 3000 min⁻¹								
1500	45,0-47,0	1520						
F 60 PS / 2800 min⁻¹								
1400	47,0-49,0	1420						
B 58 PS / 2800 min⁻¹								
1400	45,0-47,0	1420						
A 54 PS / 2800 min⁻¹								
1400	45,5-47,5	1420						
F 58 PS / 2600 min⁻¹								
1300	46,0-48,0	1320						
B 56 PS / 2600 min⁻¹								
1300	44,0-46,0	1320						
A 52 PS / 2600 min⁻¹								
1300	45,0-47,0	1320						
F 56 PS / 2500 min⁻¹								
1250	45,0-47,0	1270						
B 54 PS / 2500 min⁻¹								
1250	43,5-45,5	1270						
A 50 PS / 2500 min⁻¹								
1250	44,5-46,5	1270						

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 54 PS / 2400 min⁻¹

1200 44,5-46,5 1220

B 52 PS / 2400 min⁻¹

1200 43,0-45,0 1220

A 48 PS / 2400 min⁻¹

1200 44,0-46,0 1220

F 52 PS / 2300 min⁻¹

1150 43,5-45,5 1170

B 50 PS / 2300 min⁻¹

1150 42,0-44,0 1170

A 46 PS / 2300 min⁻¹

1150 43,5-45,5 1170

F 50 PS / 2200 min⁻¹

1100 43,0-45,0 1120

B 48 PS / 2200 min⁻¹

1100 41,0-43,0 1120

A 44 PS / 2200 min⁻¹

1100 42,5-44,5 1120

F 48 PS / 2100 min⁻¹

1050 42,0-44,0 1060

B 46 PS / 2100 min⁻¹

1050 40,5-42,5 1060

A 42 PS / 2100 min⁻¹

1050 41,5-43,5 1060

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46 PS / 2000 min⁻¹

1000 41,5-43,5 1010

B 44 PS / 2000 min⁻¹

1000 40,0-42,0 1010

A 40 PS / 2000 min⁻¹

1000 41,0-43,0 1010

B 40 PS / 1800 min⁻¹

900 38,0-40,0 910

A 36 PS / 1800 min⁻¹

900 40,0-42,0 910

A 30 PS / 1500 min⁻¹

750 39,5-41,5 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 93 PS / 3000 min⁻¹

1500 46,0-48,0 1520

B 90 PS / 3000 min⁻¹

1500 44,5-46,5 1520

A 84 PS / 3000 min⁻¹

1500 44,5-46,5 1520

F 90 PS / 2800 min⁻¹

1400 46,5-48,5 1420

B 87 PS / 2800 min⁻¹

1400 44,5-46,5 1420

A 81 PS / 2800 min⁻¹

1400 45,0-47,0 1420

F 87 PS / 2600 min⁻¹

1300 45,5-47,5 1320

B 84 PS / 2600 min⁻¹

1300 44,0-46,0 1320

A 78 PS / 2600 min⁻¹

1300 44,5-46,5 1320

F 84 PS / 2500 min⁻¹

1250 45,0-47,0 1270

B 81 PS / 2500 min⁻¹

1250 43,0-45,0 1270

A 75 PS / 2500 min⁻¹

1250 44,0-46,0 1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 81 PS / 2400 min⁻¹

1200 44,0-46,0 1220

B 78 PS / 2400 min⁻¹

1200 42,5-44,5 1220

A 72 PS / 2400 min⁻¹

1200 43,5-45,5 1220

F 78 PS / 2300 min⁻¹

1150 43,5-45,5 1170

B 75 PS / 2300 min⁻¹

1150 41,5-43,5 1170

A 69 PS / 2300 min⁻¹

1150 42,5-44,5 1170

F 75 PS / 2200 min⁻¹

1100 42,5-44,5 1120

B 72 PS / 2200 min⁻¹

1100 41,0-43,0 1120

A 66 PS / 2200 min⁻¹

1100 42,0-44,0 1120

F 72 PS / 2100 min⁻¹

1050 41,5-43,5 1070

B 69 PS / 2100 min⁻¹

1050 40,0-42,0 1070

A 63 PS / 2100 min⁻¹

1050 41,0-43,0 1070

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 69 PS / 2000 min⁻¹

1000 41,0-43,0 1010

B 66 PS / 2000 min⁻¹

1000 39,5-41,5 1010

A 60 PS / 2000 min⁻¹

1000 40,5-42,5 1010

B 60 PS / 1800 min⁻¹

900 38,0-40,0 910

A 54 PS / 1800 min⁻¹

900 40,0-42,0 910

A 45 PS / 1500 min⁻¹

750 38,5-40,5 760

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 1,5 c

4. Edition

En

PES 2 A 75D..RS1235,1252,1298 EP/RSV 300-1000A7B505DR
 3 80 ..RS1236,1239,1299
 4 ..RS1237,1246,1276,1301
 6 ..RS1238,1302 EP/RSV 325-1500 A2B505DR

supersedes 7.77

company: MWM

engine: D 208 -

D 308 -

D 225 -

D 325 - 2.6

D 226

D 327

As from FD 823 the idle auxiliary-spring has been changed
 from 1 424 641 000 to ... 001. New values enclosed.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery "C" and "D" cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery "C" and "D" cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	12	6,2-6,6	0,4	9	4,1-4,5	
200	9	3,2-3,7		6	1,2-2,0	
	9	2,1-2,8		9	2,7-3,7	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

300-1000

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1000	16,0	without auxiliary spring			ca. 28	300	5,5	-	-
	1050	8,5					100	19 - 21		
	1100	2,4					300	5,7-6,3		
⑤ ca. 67	1030	8,0-9,0	with auxiliary spring				450	0 - 1		
	1070	2,0-4,0								
	1120	0,3-1,0								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
Page 3 - 33!									

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

B. Governor Settings

325-1500

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca. 58	1500 1580 1630	16,0 9,0 4,2	without auxiliary spring			ca. 20	325	5,5	-	-
ca. 56	1530 1580 1620	8,0-9,0 3,0-4,0 0,3-1,0					100 325 420 520	19 - 21 5,7-6,3 1,4-3,4 0 - 1		
②a			with auxiliary spring							

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle ⑤		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...) rev/min 3							
rev/min 1	cm³/1000 strokes 2	3	4	5	6	7	8	9	Control rod travel mm 9
Page 3 - 33!									

Checking values in brackets

* 1 mm less control rod travel than col. 2

The nameplate described at MWM 1.5 a has recently been extended to 2 speeds and 2 deliveries - in column n = (speed) and Q = (full-load delivery) for more accurate setting in the case of governors with torque control.

The following points apply, deviating from WPP 001/4, Supplement 1, setting the governor and the pump:

(2) Setting according to nameplate n = (speed 1) and Q = (delivery 1); or according to columns 1 and 2

(3) Is contacted until change of control-rod travel, as read under (2), or (with new nameplate) until the 2 delivery is reached at speed 2; or according to columns 4 and 5

(6) Is adjusted according to nameplate n = (speed 1 + 20 rpm) or column 3

For repairs on Fendt tractors on which the new nameplate (with 2 speeds and 2 deliveries) has not yet been introduced, the full-load data apply - ordered according to engine types -

according to the above note

In the case of new replacement pumps from Stuttgart warehouse there is no spring retainer. Send for from MWM according to old nameplate!

Full-load data for Fendt tractor vehicles D 208/308

only valid for engines with pumps PES 3 A 75 C 320/3 RS 1236 a. 39
PES 4 A 75 C 320/3 RS 1237

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

Fendt tractors- Output at speed - Engine and tractor type

32 PS / 2100 min⁻¹ D 208 - 3 - Farmer 2 D -

1050 36,0-37,0 1070 700 39,0-41,0

32 PS / 1050 min⁻¹ D 308 - 3 - 231 GT -

975 36,0-37,0 990 700 39,0-41,0

38 PS / 2600 min⁻¹ D 208 - 3 - Farmer 2 -

1300 35,0-36,0 1320 700 36,0-38,0

55 PS / 2400 min⁻¹ D 208 - 4 - Farmer 4 S -

1200 41,0-42,0 1220 700 42,0-44,0

General fitting - Output at speed

D 208 - 2

F 31 PS / 3000 min⁻¹

1500 41,5-43,5 1520

B 30 PS / 3000 min⁻¹

1500 39,5-41,5 1520

A 28 PS / 3000 min⁻¹

1500 41,5-43,5 1520

F 30 PS / 2800 min⁻¹

1400 41,5-43,5 1420

B 29 PS / 2800 min⁻¹

1400 40,0-42,0 1420

A 27 PS / 2800 min⁻¹

1400 41,5-43,5 1420

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 29 PS / 2600 min⁻¹

1300 43,0-45,0 1320

B 28 PS / 2600 min⁻¹

1300 41,0-43,0 1320

A 26 PS / 2600 min⁻¹

1300 42,5-44,5 1320

F 28 PS / 2500 min⁻¹

1250 42,5-44,5 1270

B 27 PS / 2500 min⁻¹

1250 40,5-42,5 1270

A 25 PS / 2500 min⁻¹

1250 41,5-43,5 1270

F 27 PS / 2400 min⁻¹

1200 42,0-44,0 1220

B 26 PS / 2400 min⁻¹

1200 40,0-42,0 1220

A 24 / 2400 min⁻¹

1200 41,0-43,0 1220

F 26 PS / 2300 min⁻¹

1150 41,5-43,5 1170

B 25 PS / 2300 min⁻¹

1150 39,5-41,5 1170

A 23 PS / 2300 min⁻¹

1150 40,5-42,5 1170

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 25 PS / 2200 min⁻¹

1100 41,0-43,0 1120

B 24 PS / 2200 min⁻¹

1100 39,0-41,0 1120

A 22 PS / 2200 min⁻¹

1100 40,0-42,0 1120

F 24 PS / 2100 min⁻¹

1050 40,5-42,5 1060

B 23 PS / 2100 min⁻¹

1050 38,0-40,0 1060

A 21 PS / 2100 min⁻¹

1050 39,0-41,0 1060

F 23 PS / 2000 min⁻¹

1000 39,0-41,0 1010

B 22 PS / 2000 min⁻¹

1000 37,0-39,0 1010

A 20 PS / 2000 min⁻¹

1000 38,0-40,0 1010

B 20 PS / 1800 min⁻¹

900 36,0-38,0 910

A 18 PS / 1800 min⁻¹

900 36,5-38,5 910

B 16 PS / 1500 min⁻¹

750 34,0-36,0 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation		Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3		4	5	6	7	8	

A 15 PS / 1500 min⁻¹

750 36,0-38,0 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46,5 PS / 3000 min⁻¹

1500 42,0-44,0 1520

B 45 PS / 3000 min⁻¹

1500 39,0-41,0 1520

A 42 PS / 3000 min⁻¹

1500 40,5-42,5 1520

F 45 PS / 2800 min⁻¹

1400 42,0-44,0 1420

B 43,5 PS / 2800 min⁻¹

1400 39,0-41,0 1420

A 40,5 PS / 2800 min⁻¹

1400 40,0-42,0 1420

F 43,5 PS / 2600 min⁻¹

1300 41,5-43,5 1320

B 42 PS / 2600 min⁻¹

1300 39,5-41,5 1320

A 39 PS / 2600 min⁻¹

1300 40,0-42,0 1320

F 42 PS / 2500 min⁻¹

1250 40,5-42,5 1270

B 40,5 PS / 2500 min⁻¹

1250 38,5-40,5 1270

A 37,5 PS / 2500 min⁻¹

1250 39,5-41,5 1270

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 40,5 PS / 2400 min⁻¹

1200 40,5-42,5 1220

B 39 PS / 2400 min⁻¹

1200 38,5-40,5 1220

A 36 PS / 2400 min⁻¹

1200 39,5-41,5 1220

F 39 PS / 2300 min⁻¹

1150 39,5-41,5 1170

B 37,5 PS / 2300 min⁻¹

1150 38,0-40,0 1170

A 34,5 PS / 2300 min⁻¹

1150 38,0-40,0 1170

F 37,5 PS / 2200 min⁻¹

1100 38,5-40,5 1120

B 36 PS / 2200 min⁻¹

1100 36,5-38,5 1120

A 33 PS / 2200 min⁻¹

1100 38,0-40,0 1120

F 36 PS / 2100 min⁻¹

1050 38,0-40,0 1060

B 34,5 PS / 2100 min⁻¹

1050 36,0-38,0 1060

A 31,5 PS / 2100 min⁻¹

1050 36,0-38,0 1060

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 34,5 PS / 2000 min⁻¹

1000 37,0-39,0 1010

B 33 PS / 2000 min⁻¹

1000 35,5-37,5 1010

A 30 PS / 2000 min⁻¹

1000 37,0-39,0 1010

B 30 PS / 1800 min⁻¹

900 34,0-36,0 910

A 27 PS / 1800 min⁻¹

900 35,0-37,0 910

B 24 PS / 1500 min⁻¹

750 33,0-35,0 760

A 22,5 PS / 1500 min⁻¹

750 36,0-38,0 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 62 PS / 3000 min⁻¹								
1500	40,5-42,5	1520						
B 60 PS / 3000 min⁻¹								
1500	39,0-41,0	1520						
A 56 PS / 3000 min⁻¹								
1500	40,0-42,0	1520						
F 60 PS / 2800 min⁻¹								
1400	40,0-42,0	1420						
B 58 PS / 2800 min⁻¹								
1400	35,5-37,5	1420						
A 54 PS / 2800 min⁻¹								
1400	40,0-42,0	1420						
F 58 PS / 2600 min⁻¹								
1300	40,0-42,0	1320						
B 56 PS / 2600 min⁻¹								
1300	38,0-40,0	1320						
A 52 PS / 2600 min⁻¹								
1300	39,0-41,0	1320						
F 56 PS / 2500 min⁻¹								
1250	39,0-41,0	1270						
B 54 PS / 2500 min⁻¹								
1250	37,5-39,5	1270						
A 50 PS / 2500 min⁻¹								
1250	39,0-41,0	1270						

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Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 54 PS / 2400 min⁻¹

1200 39,0-41,0 1220

B 52 PS / 2400 min⁻¹

1200 37,5-39,5 1220

A 48 PS / 2400 min⁻¹

1200 38,0-40,0 1220

F 52 PS / 2300 min⁻¹

1150 38,0-40,0 1170

B 50 PS / 2300 min⁻¹

1150 36,5-38,5 1170

A 46 PS / 2300 min⁻¹

1150 37,5-39,5 1170

F 50 PS / 2200 min⁻¹

1100 39,0-41,0 1120

B 48 PS / 2200 min⁻¹

1100 37,0-39,0 1120

A 44 PS / 2200 min⁻¹

1100 38,0-40,0 1120

F 48 PS / 2100 min⁻¹

1050 37,5-39,5 1060

B 46 PS / 2100 min⁻¹

1050 35,5-37,5 1060

A 42 PS / 2100 min⁻¹

1050 36,0-38,0 1060

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 46 PS / 2000 min⁻¹								
1000	38,0-40,0	1010						
B 44 PS / 2000 min⁻¹								
1000	35,5-37,5	1010						
A 40 PS / 2000 min⁻¹								
1000	36,0-38,0	1010						
B 40 PS / 1800 min⁻¹								
900	34,5-36,5	910						
A 36 PS / 1800 min⁻¹								
900	34,0-36,0	910						
B 32 PS / 1500 min⁻¹								
750	30,5-32,5	760						
A 30 PS / 1500 min⁻¹								
750	33,0-35,0	760						

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Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 93 PS / 3000 min⁻¹

1500 39,5-41,5 1520

B 90 PS / 3000 min⁻¹

1500 38,0-40,0 1520

A 84 PS / 3000 min⁻¹

1500 39,0-41,0 1520

F 90 PS / 2800 min⁻¹

1400 39,5-41,5 1420

B 87 PS / 2800 min⁻¹

1400 38,0-40,0 1420

A 81 PS / 2800 min⁻¹

1400 39,0-41,0 1420

F 87 PS / 2600 min⁻¹

1300 39,5-41,5 1320

B 84 PS / 2600 min⁻¹

1300 38,0-40,0 1320

A 78 PS / 2600 min⁻¹

1300 38,5-40,5 1320

F 84 PS / 2500 min⁻¹

1250 39,0-41,0 1270

B 81 PS / 2500 min⁻¹

1250 37,0-39,0 1270

A 75 PS / 2500 min⁻¹

1250 38,0-40,0 1270

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 81 PS / 2400 min⁻¹								
1200	38,0-40,0	1220						
B 78 PS / 2400 min⁻¹								
1200	36,5-38,5	1220						
A 72 PS / 2400 min⁻¹								
1200	38,0-40,0	1220						
F 78 PS / 2300 min⁻¹								
1150	38,0-40,0	1170						
B 75 PS / 2300 min⁻¹								
1150	36,5-38,5	1170						
A 69 PS / 2300 min⁻¹								
1150	37,0-39,0	1170						
F 75 PS / 2200 min⁻¹								
1100	38,0-40,0	1120						
B 72 PS / 2200 min⁻¹								
1100	36,0-38,0	1120						
A 66 PS / 2200 min⁻¹								
1100	37,0-39,0	1120						
F 72 PS / 2100 min⁻¹								
1050	37,0-39,0	1060						
B 69 PS / 2100 min⁻¹								
1050	35,5-37,5	1060						
A 63 PS / 2100 min⁻¹								
1050	36,0-38,0	1060						

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Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 69 PS / 2000 min⁻¹

1000 36,5-38,5 1010

B 66 PS / 2000 min⁻¹

1000 34,5-36,5 1010

A 60 PS / 2000 min⁻¹

1000 35,0-37,0 1010

B 60 PS / 1800 min⁻¹

900 33,5-35,5 910

A 54 PS / 1800 min⁻¹

900 34,0-36,0 910

B 48 PS / 1500 min⁻¹

750 31,0-33,0 760

A 45 PS / 1500 min⁻¹

750 33,0-35,0 760

①

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 35,5 PS / 3000 min⁻¹								
1500	55,0-57,0	1520	800	52,5-55,5				
A 32 PS / 3000 min⁻¹								
1500	51,0-53,0	1520						
F 41 PS / 2800 min⁻¹								
1400	66,5-68,5	1420	800	55,5-58,5				
F 38,5 PS / 2500 min⁻¹								
1250	62,5-64,5	1270	800	55,5-58,5				
B 37 PS / 2500 min⁻¹								
1250	59,5-61,5	1270	800	52,5-55,5				
A 34 PS / 2500 min⁻¹								
1250	55,5-57,5	1270						
F 36,5 PS / 2300 min⁻¹								
1150	60,5-62,5	1170	800	55,5-58,5				
B 35 PS / 2300 min⁻¹								
1150	58,5-60,5	1170	800	52,5-55,5				
A 32 PS / 2300 min⁻¹								
1150	53,0-55,0	1170						
F 33 PS / 2000 min⁻¹								
1000	58,5-60,5	1010	750	55,0-58,0				
B 31 PS / 2000 min⁻¹								
1000	55,0-57,0	1010	750	52,5-55,5				
A 28,5 PS / 2000 min⁻¹								
1000	50,0-52,0	1010						

Checking values in brackets

* 1 mm less control rod travel than col 2

①
Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 28,5 PS / 1800 min⁻¹

900	52,5-54,5	910	750	52,0-55,0
-----	-----------	-----	-----	-----------

A 26 PS / 1800 min⁻¹

900	48,0-50,0	910
-----	-----------	-----

B 24 PS / 1500 min⁻¹

750	46,5-48,5	760	750	50,5-53,5
-----	-----------	-----	-----	-----------

A 22 PS / 1500 min⁻¹

750	51,0-53,0	760
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 Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 53 PS / 3000 min⁻¹

1500	54,5-56,5	1520	800	51,0-54,0
------	-----------	------	-----	-----------

A 48 PS / 3000 min⁻¹

1500	50,5-52,5	1520		
------	-----------	------	--	--

F 62 PS / 2800 min⁻¹

1400	66,5-68,5	1420	800	54,0-57,0
------	-----------	------	-----	-----------

F 58 PS / 2500 min⁻¹

1250	62,5-64,5	1270	800	54,0-57,0
------	-----------	------	-----	-----------

B 56 PS / 2500 min⁻¹

1250	59,5-61,5	1270	800	51,0-54,0
------	-----------	------	-----	-----------

A 51 PS / 2500 min⁻¹

1250	54,5-56,5	1270		
------	-----------	------	--	--

F 55 PS / 2300 min⁻¹

1150	58,5-60,5	1170	800	54,0-57,0
------	-----------	------	-----	-----------

B 53 PS / 2300 min⁻¹

1150	57,5-59,5	1170	800	51,0-54,0
------	-----------	------	-----	-----------

A 48 PS / 2300 min⁻¹

1150	51,5-53,5	1170		
------	-----------	------	--	--

F 49,5 PS / 2000 min⁻¹

1000	57,5-59,5	1010	750	54,0-57,0
------	-----------	------	-----	-----------

B 46,5 PS / 2000 min⁻¹

1000	53,5-55,5	1010	750	51,0-54,0
------	-----------	------	-----	-----------

A 43 PS / 2000 min⁻¹

1000	48,5-50,5	1010		
------	-----------	------	--	--

 ①
Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 43 PS / 1800 min⁻¹								
900	52,5-54,5	910	750	52,0-55,0				
A 39 PS / 1800 min⁻¹								
900	47,5-49,5	910						
B 36 PS / 1500 min⁻¹								
750	49,5-51,5	760	650	49,0-52,0				
A 33 PS / 1500 min⁻¹								
750	45,5-47,5	760						

 ①
Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 71 PS / 3000 min⁻¹

1500	54,5-56,5	1520	800	62,0-65,0
------	-----------	------	-----	-----------

A 64 PS / 3000 min⁻¹

1500	49,5-51,5	1520		
------	-----------	------	--	--

F 83 PS / 2800 min⁻¹

1400	65,5-67,5	1420	800	63,0-66,0
------	-----------	------	-----	-----------

F 78 PS / 2500 min⁻¹

1250	61,5-63,5	1270	800	50,0-53,0
------	-----------	------	-----	-----------

B 74,5 PS / 2500 min⁻¹

1250	58,5-60,5	1270	800	50,0-53,0
------	-----------	------	-----	-----------

A 68 PS / 2500 min⁻¹

1250	53,5-55,5	1270		
------	-----------	------	--	--

F 73 PS / 2300 min⁻¹

1150	60,5-62,5	1170	800	52,0-55,0
------	-----------	------	-----	-----------

B 71 PS / 2300 min⁻¹

1150	58,5-60,5	1170	800	50,0-53,0
------	-----------	------	-----	-----------

A 64 PS / 2300 min⁻¹

1150	51,5-53,5	1170		
------	-----------	------	--	--

F 66 PS / 2000 min⁻¹

1000	57,5-59,5	1010	750	52,0-55,0
------	-----------	------	-----	-----------

B 62,5 PS / 2000 min⁻¹

1000	53,5-55,5	1010	750	50,0-53,0
------	-----------	------	-----	-----------

A 57 PS / 2000 min⁻¹

1000	48,5-50,5	1010		
------	-----------	------	--	--

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 57 PS / 1800 min⁻¹

900	51,5-53,5	910	750	49,0-52,0
-----	-----------	-----	-----	-----------

A 52 PS / 1800 min⁻¹

900	45,5-47,5	910
-----	-----------	-----

B 48 PS / 1500 min⁻¹

750	48,5-50,5	760	650	47,0-50,0
-----	-----------	-----	-----	-----------

A 44 PS / 1500 min⁻¹

750	45,5-47,5	760
-----	-----------	-----

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 106 PS / 3000 min⁻¹

1500	55,5-57,5	1520	800	50,0-53,0
------	-----------	------	-----	-----------

A 96 PS / 3000 min⁻¹

1500	49,5-51,5	1520		
------	-----------	------	--	--

F 125 PS / 2800 min⁻¹

1400	66,5-68,5	1420	800	54,0-57,0
------	-----------	------	-----	-----------

F 117 PS / 2500 min⁻¹

1250	61,5-63,5	1270	800	54,0-57,0
------	-----------	------	-----	-----------

B 112 PS / 2500 min⁻¹

1250	58,5-60,5	1270	800	50,0-53,0
------	-----------	------	-----	-----------

A 102 PS / 2500 min⁻¹

1250	53,5-55,5	1270		
------	-----------	------	--	--

F 110 PS / 2300 min⁻¹

1150	59,5-61,5	1170	800	54,0-57,0
------	-----------	------	-----	-----------

B 106 PS / 2300 min⁻¹

1150	56,5-58,5	1170	800	50,0-53,0
------	-----------	------	-----	-----------

A 96 PS / 2300 min⁻¹

1150	51,5-53,5	1170		
------	-----------	------	--	--

F 99 PS / 2000 min⁻¹

1000	56,5-58,5	1010	750	54,0-57,0
------	-----------	------	-----	-----------

B 94 PS / 2000 min⁻¹

1000	53,5-55,5	1010	750	50,0-53,0
------	-----------	------	-----	-----------

A 86 PS / 2000 min⁻¹

1000	47,5-49,5	1010		
------	-----------	------	--	--

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 86 PS / 1800 min⁻¹								
900	49,5-51,5	910	750	53,0-56,0				
A 78 PS / 1800 min⁻¹								
900	46,5-48,5	910						
B 72 PS / 1500 min⁻¹								
750	49,5-51,5	760	650	47,0-50,0				
A 66 PS / 1500 min⁻¹								
750	45,5-47,5	760						

 ①
 Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 33 PS / 2800 min⁻¹								
1400	51,5-53,5	1420	800	46,0-49,0				
F 32 PS / 2500 min⁻¹								
1250	52,5-54,5	1270	800	46,0-49,0				
B 31 PS / 2500 min⁻¹								
1250	49,5-51,5	1270	800	44,0-47,0				
A 28 PS / 2500 min⁻¹								
1250	49,5-51,5	1270						
F 30 PS / 2300 min⁻¹								
1150	48,5-50,5	1170	800	46,0-49,0				
B 28,5 PS / 2300 min⁻¹								
1150	45,5-47,5	1170	800	44,0-47,0				
A 26 PS / 2300 min⁻¹								
1150	45,5-47,5	1170						
F 26 PS / 2000 min⁻¹								
1000	43,5-45,5	1010	800	46,0-49,0				
B 25 PS / 2000 min⁻¹								
1000	41,5-43,5	1010	800	44,0-47,0				
A 23 PS / 2000 min⁻¹								
1000	41,5-43,5	1010						
A 21 PS / 1800 min⁻¹								
900	41,5-43,5	910						
A 17 PS / 1500 min⁻¹								
750	39,5-41,5	760						

Checking values in brackets

* 1 mm less control rod travel than col 2

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 50 PS / 2800 min⁻¹								
1400	48,5-50,5	1420	800	46,0-49,0				
F 48,5 PS / 2500 min⁻¹								
1250	50,5-52,5	1270	800	46,0-49,0				
B 46,5 PS / 2500 min⁻¹								
1250	47,5-49,5	1270	800	43,0-46,0				
A 42 PS / 2500 min⁻¹								
1250	47,5-49,5	1270						
F 46 PS / 2300 min⁻¹								
1150	47,5-49,5	1170	800	46,0-49,0				
B 44 PS / 2300 min⁻¹								
1150	45,5-47,5	1170	800	43,0-46,0				
A 40 PS / 2300 min⁻¹								
1150	45,5-47,5	1170						
F 40 PS / 2000 min⁻¹								
1000	44,5-46,5	1010	800	46,0-49,0				
B 38,5 PS / 2000 min⁻¹								
1000	42,5-44,5	1010	800	43,0-46,0				
A 35 PS / 2000 min⁻¹								
1000	42,5-44,5	1010						
A 31,5 PS / 1800 min⁻¹								
900	40,5-42,5	910						
A 26 PS / 1500 min⁻¹								
750	39,5-41,5	760						

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching gear		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 68 PS / 2800 min⁻¹								
1400	49,5-51,5	1420	800	46,0-49,0				
F 66 PS / 2500 min⁻¹								
1250	50,5-52,5	1270	800	46,0-49,0				
B 63 PS / 2500 min⁻¹								
1250	47,5-49,5	1270	800	44,0-47,0				
A 57,5 PS / 2500 min⁻¹								
1250	47,5-49,5	1270						
F 61 PS / 2300 min⁻¹								
1150	47,5-49,5	1170	800	46,0-49,0				
B 58,5 PS / 2300 min⁻¹								
1150	45,5-47,5	1170	800	44,0-47,0				
A 53,5 PS / 2300 min⁻¹								
1150	45,5-47,5	1170						
F 53 PS / 2000 min⁻¹								
1000	43,5-45,5	1010	800	46,0-49,0				
B 51 PS / 2000 min⁻¹								
1000	41,5-43,5	1010	800	44,0-47,0				
A 46,5 PS / 2000 min⁻¹								
1000	41,5-43,5	1010						
A 42 PS / 1800 min⁻¹								
900	40,5-42,5	910						
A 35 PS / 1500 min⁻¹								
750	39,5-41,5	760						

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 102 PS / 2800 min⁻¹

1400	49,5-51,5	1420	800	46,0-49,0
------	-----------	------	-----	-----------

F 99 PS / 2500 min⁻¹

1250	50,5-52,5	1270	800	46,0-49,0
------	-----------	------	-----	-----------

B 95 PS / 2500 min⁻¹

1250	47,5-49,5	1270	800	44,0-47,0
------	-----------	------	-----	-----------

A 86 PS / 2500 min⁻¹

1250	47,5-49,5	1270		
------	-----------	------	--	--

F 92 PS / 2300 min⁻¹

1150	47,5-49,5	1170	800	46,0-49,0
------	-----------	------	-----	-----------

B 88 PS / 2300 min⁻¹

1150	45,5-47,5	1170	800	44,0-47,0
------	-----------	------	-----	-----------

A 80 PS / 2300 min⁻¹

1150	45,5-47,5	1170		
------	-----------	------	--	--

F 80 PS / 2000 min⁻¹

1000	43,5-45,5	1010	800	46,0-49,0
------	-----------	------	-----	-----------

B 77 PS / 2000 min⁻¹

1000	41,5-43,5	1010	800	44,0-47,0
------	-----------	------	-----	-----------

A 70 PS / 2000 min⁻¹

1000	41,5-43,5	1010		
------	-----------	------	--	--

A 63 PS / 1800 min⁻¹

900	40,5-42,5	910		
-----	-----------	-----	--	--

A 52,5 PS / 1500 min⁻¹

750	39,5-41,5	760		
-----	-----------	-----	--	--

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 48 PS / 3000 min⁻¹

1500	47,0-49,0	1520	800	49,5-52,5
------	-----------	------	-----	-----------

A 43,5 PS / 3000 min⁻¹

1500	44,0-46,0	1520		
------	-----------	------	--	--

F 55 PS / 2800 min⁻¹

1400	53,5-55,5	1420	800	52,5-55,5
------	-----------	------	-----	-----------

F 53 PS / 2500 min⁻¹

1250	55,5-57,5	1270	800	52,5-55,5
------	-----------	------	-----	-----------

B 50 PS / 2500 min⁻¹

1250	52,5-54,5	1270	800	49,5-52,5
------	-----------	------	-----	-----------

A 46,5 / 2500 min⁻¹

1250	48,0-50,0	1270		
------	-----------	------	--	--

F 50 PS / 2300 min⁻¹

1150	56,0-58,0	1170	800	51,0-54,0
------	-----------	------	-----	-----------

B 48,5 PS / 2300 min⁻¹

1150	51,5-53,5	1170	800	49,5-52,5
------	-----------	------	-----	-----------

A 44 PS / 2300 min⁻¹

1150	47,0-49,0	1170		
------	-----------	------	--	--

F 46 PS / 2000 min⁻¹

1000	54,0-56,0	1010	750	52,5-55,5
------	-----------	------	-----	-----------

B 44 PS / 2000 min⁻¹

1000	50,5-52,5	1010	750	50,0-53,0
------	-----------	------	-----	-----------

A 40 PS / 2000 min⁻¹

1000	46,0-48,0	1010		
------	-----------	------	--	--

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 40 PS / 1800 min⁻¹

900	49,5-51,5	910	750	50,0-53,0
-----	-----------	-----	-----	-----------

A 36,5 PS / 1800 min⁻¹

900	45,0-47,0	910
-----	-----------	-----

B 33,5 PS / 1500 min⁻¹

750	47,5-49,5	760
-----	-----------	-----

A 30,5 PS / 1500 min⁻¹

750	43,5-45,5	760
-----	-----------	-----

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 64 PS / 3000 min⁻¹								
1500	47,5-49,5	1520	800	49,0-52,0				
A 58 PS / 3000 min⁻¹								
1500	44,0-46,0	1520						
F 74 PS / 2800 min⁻¹								
1400	53,5-55,5	1420	800	52,0-55,0				
F 70,5 PS / 2500 min⁻¹								
1250	52,5-54,5	1270	800	52,0-55,0				
B 67 PS / 2500 min⁻¹								
1250	49,0-51,0	1270	800	49,0-52,0				
A 61 PS / 2500 min⁻¹								
1250	44,5-46,5	1270						
F 67 PS / 2300 min⁻¹								
1150	51,5-53,5	1170	800	52,0-55,0				
B 64,5 PS / 2300 min⁻¹								
1150	49,0-51,0	1170	800	49,0-52,0				
A 58,5 PS / 2300 min⁻¹								
1150	44,5-46,5	1170						
F 61 PS / 2000 min⁻¹								
1000	50,0-52,0	1010	750	49,5-52,5				
B 58,5 PS / 2000 min⁻¹								
1000	48,0-50,0	1010	750	49,5-52,5				
A 53 PS / 2000 min⁻¹								
1000	44,0-46,0	1010						

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

B 53 PS / 1800 min⁻¹

900 47,0-49,0 910 750 49,5-52,5

A 49 PS / 1800 min⁻¹

900 43,0-45,0 910

B 44,5 PS / 1500 min⁻¹

750 47,0-49,0 760

A 41 PS / 1500 min⁻¹

760 43,0-45,0 760

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 96 PS / 3000 min⁻¹								
1500	51,5-53,5	1520	800	50,0-53,0				
A 87 PS / 3000 min⁻¹								
1500	47,5-49,5	1520						
F 112 PS / 2800 min⁻¹								
1400	58,0-60,0	1420	800	53,0-56,0				
F 106 PS / 2500 min⁻¹								
1250	57,5-59,5	1270	800	53,0-56,0				
B 101 PS / 2500 min⁻¹								
1250	54,0-56,0	1270	800	50,0-53,0				
A 92 PS / 2500 min⁻¹								
1250	49,0-51,0	1270						
F 101 PS / 2300 min⁻¹								
1150	57,5-59,5	1170	800	53,0-56,0				
B 97 PS / 2300 min⁻¹								
1150	55,0-57,0	1170	800	50,0-53,0				
A 88 PS / 2300 min⁻¹								
1150	50,0-52,0	1170						
F 92 PS / 2000 min⁻¹								
1000	52,5-54,5	1010	750	50,0-53,0				
B 88 PS / 2000 min⁻¹								
1000	50,0-52,0	1010	750	50,0-53,0				
A 80 PS / 2000 min⁻¹								
1000	45,5-47,5	1010						

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
B 80 PS / 1800 min⁻¹								
900	50,0-52,0	910	750	50,0-53,0				
A 73 PS / 1800 min⁻¹								
900	45,5-47,5	910						
B 67 PS / 1500 min⁻¹								
750	50,0-52,0	760	650	52,0-55,0				
A 61 PS / 1500 min⁻¹								
750	45,5-47,5	760						

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 5,7 v 2

2. Edition

En

PES 6A 90D 410PS 2596 RQV300-1400 AB1066-1DL

supersedes 4.80
company: Daimler-Benz
engine: OM 352 A
125 kW(171 PS)

1 - 5 - 3 - 6 - 2 - 4
0 -60 -120-180-240-300 ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,95-2,15)
2,00-2,10 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	13,1+0,1	7,2 - 7,3	0,3(4,5)			
300	8,9-9,1	1,1 - 1,7	0,2(0,4)			
500/500	-	C, Sp.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca.68	1400 1800	15,2-17,8 0 - 1	-	-	-	ca.16	100 300 740-800=2,0	min.10,5 8,9-9,1 2,0	300 500 1450	1,2 2,5-2,7 8,6
ca.62	12,1 4,0	1440-1450 1595-1625				400-470 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 +0,2
LDA 1400	0,7 bar 72,5-73,5 (72,5-75,5)	1440-1450*	LDA 500	0,7 bar 72,5-74,5 (70,5-76,5)	100	72,25-82,25	1400 1225 1050 500	13,1 13,4 14,0 14,3
			LDA 500	0 bar 58,0-60,5 (56,0-62,0)		100-220 (80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.80

BOSCH

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H1

H1

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

rev/min decreasing pressure - in bar gauge pressure
increasing

MB 5,7 v 2

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2596 with 1066-1DL	0,7	0,35 0,225 0	14,3 - 14,4 14,0 - 14,1 13,4 - 13,6 13,0 - 13,1

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 6,2 k

4. Edition

En

PE 6 A 85 D 320 RS 2546 RQ 250/1300 AB 1023 R
2546Z, EP/RSV 250-1300 A 5 B 2025 R
1200

supersedes 2.79
company: DAF
engine: DF 615

See Service Information VDT-I-DAF 004

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,15-2,25} (2,10-2,30) RW 9 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,2	5,4 - 5,6	0,3(0,45)			
	+0,1					
250	7,3-7,7	1,4 - 1,9	0,2(0,4)			

Port closing difference between control-rod travel 9 mm and max. 3,0 - 4,0 ° camshaft
Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
550	19,6-20,4	550	20,0	9,2 4,0	1345-1360 1425-1455	250	6,5	100 250 300- 400	min.8,0 6,4-6,6 360=2,0 0 - 1	-	-
1300	Breakway	VH ca.49°									
1550	0 - 1										

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1000	55,0 - 56,0 (53,0 - 58,0)				100	19 - 21

Checking values in brackets

11.79

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H3

H3

The numbers denote the sequence of the tests

B. Governor Settings

EP/RSV..2025 R

① Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			④ Control-lever deflection in degrees 7		Lower rated speed rev/min 8		③ Torque control rev/min 10		Control rod travel mm 11	
Control rod travel mm 2	Control rod travel mm rev/min 3							Control rod travel mm 9		Control rod travel mm 11			
loose	800	0,3-1,0				ca. 21		230	5,5			± 0,1	
	x =	4,0						100	min. 19	1000		10,2	
ca. 67	9,2	1340-1350						250	5,9-6,1	500		10,3	
②a	4,0	1355-1385						310-370	= 2,0	250		10,6	
	1550	0,3 - 1,7						500	0 - 1				

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop Test oil temp. 40°C (104°F)		⑥ Rotational-speed limitat. Note: changed to ... rev/min		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
rev/min 1	cm³/1000 strokes 2	rev/min 3		rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1000	55,0-56,0 (53,0-58,0)	1340-1350*							
"Z" 1000	49,0-50,0 (46,9-52,0)	1240-1250*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

① Upper rated speed rev/min Degree of deflection of control lever 1			Intermediate rated speed 4 5 6			④ Control-lever deflection in degrees 7		Lower rated speed rev/min 8		③ Torque control rev/min 10		Control rod travel mm 11	
Control rod travel mm 2	Control rod travel mm rev/min 3							Control rod travel mm 9		Control rod travel mm 11			
②a													

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop Test oil temp. 40°C (104°F)		⑥ Rotational-speed limitat. Note: changed to ... rev/min		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
rev/min 1	cm³/1000 strokes 2	rev/min 3		rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 n 5

2. Edition

En

PES 6 A 90 D 410 RS 2520 RQV 300-1425 AB 982 DL

supersedes 10.77
company: Daimler Benz
engine: OM 352 A
(172 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,80-1,90
(1,75-1,95) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,5	7,9 - 8,0	0,3(0,45)			
300	+0,1 7,5-7,7	0,9 - 1,5	0,2(0,4)			
800/600/500	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1800	16,0-19,4 0 - 1	-	-	-	ca. 10	100 300 570-630 = 2,0 800	min. 7,4 5,8-6,0 0 - 1	400 1425	1,4-2,2 8,1
ca. 61	10,5 4,0	1440-1450 1560-1590				3a				

Torque control travel a = 0,5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	cm ³ /1000 strokes 9
LDA 1400	0,7 bar 79,0-80,0 (77,0-82,0)	1440-1450*	LDA 600	0,7 bar 76,0-78,0 (74,0-80,0)	100	14,0-14,6 mm RW	1400 1200	11,5 11,8
800	82,0-84,0 (80,0-86,0)		LDA 500	0 bar 62,0-65,0 (60,0-67,0)			1000 600	12,1 12,6
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.79

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Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n = 800 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	Control rod travel- diminution difference mm (1)
2520 with 982 DL	0,68	0,18 0,14 0	12,5 - 12,6 12,2 - 12,3 11,7 - 11,9 11,5 - 11,6
<hr/>			

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 MAN 7,2 f

3. Edition

En

PES 6 A 85 C 412 RS2104 RQ 250/1250 AA511D
 RS2139,Z 250/1250 AB569D (1)
 ..D.. RS2139,Z 250/1250 AB598 (2)
 RS2139 250/1250 AB645D (3)

supersedes 12.74
 company: M A N
 engine: D 0836.. (1)
 HM 4/M7 H (1)
 HM70/71 (2)
 HMN 70 (3)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,50-1,60
 Port closing at prestroke (1,45-1,65) mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	4,9 - 5,5	0,4	9	4,1 - 4,5	
	6	1,3 - 2,1		6	0,6 - 1,4	
	15	12,4 - 13,1		-	- - -	
200	9	3,9 - 4,4		9	1,4 - 2,2	

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

511D, 569D (1)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
1200	14,0-14,8	1200	14,4	1250	14,2-14,4	540	0	440	0	450	15,7-16,6
				1260	12,4-14,4			400	0 - 1,8	800	15,0-15,4
				1300	3,0-11,0			300	2,9-5,3	1100	14,4-14,7
				1340	0 - 6,4			200	5,2-7,4		
				1380	0			100	6,5-8,1		

Torque-control travel on flyweight assembly dimension a = 0,5 mm

Speed regulation: At 1290 - 1305 = 1,5

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes/mm
1	2	3		4	5	6	7
(1) 1250	71,5 - 73,5			700	70,5 - 73,5	100	21 mm RW (→ 569D)
(1-Z) 1250	73,5 - 75,5			700	72,5 - 75,5	250	6,0 mm RW
(increase by ± 1,0 cm ³ !)							./.

Checking values in brackets

8.78

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H11

HM

B. Governor Settings

598 (2)

(2)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,7-16,3	600	16,0	1250 1300 1340	15,8-16,0 10,0-14,6 1,6-10,0	560	0	100 200 300	6,2-8,1 5,5-7,5 3,5-5,5	-	-

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation At

1290-1305 = 1,5

1 mm less control
rod travel**C. Settings for Fuel Injection Pump with Fitted Governor**

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
(2) 1250	76,5-78,5			900	74,0 - 77,0	100 250	min. 19 mm RW 6,0 mm RW
(2-z) 1250	75,5-77,5			900	73,0 - 76,0		
(increase by ± 1,0 cm ³ !)							

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

645D (3)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,7-16,3	600	16,0	1270 1300 1330 1400	14,4-14,7 8,0-13,8 0 - 10 0	560	0	100 200 300 460	6,8-8,1 5,6-7,7 3,4-5,6 0	850 1000 1200	15,8-16,0 15,3-15,6 14,7-15,0

Torque-control travel
on flyweight assembly dimension a =

0,4

mm

Speed regulation At

1290-1305 = 1,5

1 mm less control
rod travel**C. Settings for Fuel Injection Pump with Fitted Governor**

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
(3) 1250	72,0-74,0			800	74,5 - 77,5	100 250	21 mm RW 6,0 mm RW
(increase by ± 1,0 cm ³ !)							

En
H12 Checking values in brackets

H12

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4
3. Edition

En

PES 4 A 80 D 410 RS2131

RQ 250/1250 AB902DL

RQ 250/1250 AB934DL ./.

supersedes 8,74 11.74
company: M A N
engine: D 0844 M 11
(Korea)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,5 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,1 - 3,5	0,4			
	6	0,1 - 0,6				
200	9	0,6 - 1,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 250/1250 AB 902DL

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12	
600	19,7-20,3	600	20,0	1270	18,4-18,8	550	0	150	9,0-11,1	700	19,8-20,0
				1350	10,2-15,3			250	5,6- 9,8		
1300	Breakway	VH ca.	49°	1420	0 -10			350	1,5-4,0	1000	18,8-19,0
				1530	0			450	0		

Torque-control travel
on flyweight assembly dimension a =

0,3

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /~1000 strokes 2				cm ³ /~1000 strokes 5		cm ³ /1000 strokes/mm 7	
20°				800	60,0 - 63,0	100	mind.20mm RW
1230	59,0-61,0			500	max. 59,5		
40°				800	57,5 - 60,5	250	8 mm
1230	57,5-59,5			500	max. 59,5		

Checking values in brackets

B. Governor Settings

VDT-WPP 001/4 RQ 250/1250 AB934DL

Ppe2131

-2-

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	Test specifications rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,7-16,3	600	16,0	1280 1350 1420 1520	14,6-15,0 8,0-12,4 0 - 7,4 0	550	0	150 250 350 450	6,2-8,1 4,5-6,8 1,8-4,1 0	700 1000	15,8-16,0 15,0-15,2

Torque-control travel
on flyweight assembly dimension a = 0,3 mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes / mm 7
See page 1 !						

Checking values in brackets

B. Governor Settings

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	Test specifications rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12

Torque-control travel
on flyweight assembly dimension a = mm

Speed regulation At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes / mm 7

En Checking values in brackets

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 8,3 k

3. Edition

En

PE 6 A 95 D 410 RS2525, Y,X,
2525, Y,X,

RQ 225/1200 AB1007L

RSV 250-1200 A5 B 2013 DL

supersedes 9,78

company: DAF

engine: DHR 825

Test LDA and cold start in accordance with Service Information

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,00-2,10 \\ (1,95-2,15) \end{matrix}$ RW 9 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,6	10,8 - 11,0	0,3(0,6)			
225	+0,1 5,7-5,9	0,7 - 0,9	0,3(0,5)			
600	- - -	C, 4-5	0,4(0,7)			

Port closing difference between control-rod travel 9 mm and max. 3,0 + 4,0° camshaft

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ..1007 L

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		Control rod travel mm 6		Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12	
650	19,2-20,8	650	20,0	11,6	1230-1245	225	5,8	100	min.7,3	-	-
1200	Breakway	VH.ca.	49°	4,0	1315-1345			225	5,7-5,9		
1450	0 - 1							340-500	380=2,0 0 - 1		

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2		Control rod travel mm 3a		cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
LDA 1000	0,7 bar 106,5-108,5 (104,5-110,5)			LDA 600	0 bar 77,5-80,5 (75,5-82,5)		
X 1000	90,5- 92,5	(12,0 mm RW)		600	77,0-80,0		
Y 1000	90,0-101,0	(12,5 mm RW)		600	77,0-80,0		./.

Checking values in brackets

5.79

Testoil-ISO 4113

H15

H15

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The numbers denote the sequence of the tests

B. Governor Settings

① Upper rated speed rev/min			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	Control rod travel mm 2	Control rod travel mm rev/min 3	4	5	6	Control-lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11 +0,1
loose	800	0,3-1,0				ca. 23	250	6,3	1000	12,6
	x =	3,0					100	min.19	500	12,7
ca. 50	11,6	1230-1240					250	6,7-6,9	300	13,0-13,3
②a	4,0	1315-1345					380-440	= 2,0		
	1450	0,3- 1,7					500	0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

②b Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery ⑤ Idle		④a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ...)							
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA	0,7 bar		LDA	0 bar					
1000	106,5-108,5 (104,5-110,5)	1230-1240*	600	77,5-80,5 (75,5-82,5)	100	19-21mmRW			
X									
1000	90,5- 92,5	(12,0 mmRW)	600	77,0-80,0					
Y									
1000	99,0-101,0	(12,5 mmRW)	600	77,0-80,0					

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure CompensatorTest at n = 1200 rev/min decreasing pressure - in bar gauge pressure
increasing
XXXXXX

Pump/governor	Setting	Measurement	Control rod travel- diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2525 with 1007L 2525 with 2013DL)	0,68	0,27 0,23 0	12,6 - 12,7 12,2 - 12,3 11,5 - 11,8 11,2 - 11,3

Notes:

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4

2. Edition

En

PES 4 A 90 D 410 RS 2518 RQ 300/1400 AB898DL
.. RS 2518 RQV 300-1400 AB1018L

supersedes 3.78
company: OM Brescia
engine: 8340.04

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,8	6,9 - 7,1	0,3(0,45)	10,8	6,9 - 7,1	
300	+0,1			+0,1		
900/500	7,9-8,1	0,9 - 1,5	0,2(0,4)	7,9-8,1	0,9 - 1,5	
	- - -	C, 4 - 5	0,4(0,55)	- - -	- - -	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

RQ..989DL

Checking of slider PRG check		Full-load speed regulation		Idle speed regulation		Torque control					
①		④		⑤		③					
Setting point	Test specifications	Setting point	Test specifications	Setting point	Test specifications	Setting point	Test specifications				
Control rod travel mm	Control rod travel mm	Control rod travel mm	Control rod travel mm	Control rod travel mm	Control rod travel mm	Control rod travel mm	Control rod travel mm				
rev/min	rev/min	rev/min	rev/min	rev/min	rev/min	rev/min	rev/min				
1	2	3	4	5	6	7	8	9	10	11	12
1000	14,8-15,6	1000	15,2	9,8	1445-1460	300	6,0	100	min.7,5		+ 0,1
1400	10,8-10,9			4,0	1540-1570			300	5,9-6,1	1400	10,8
1700	0 - 1							450-600	490=2,0 0 - 1	740	10,9
										600	11,1

Torque-control travel on flyweight assembly dimension a = 0,4 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delivery characteristics		Starting fuel delivery Idle speed	Control rod travel
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7 mm RW
1400	69,5-70,5 (67,5-72,5)	500	900	64,5-67,5 (62,5-69,5)	100	16,2-16,6
			500	59,5-62,5 (57,5-64,5)		
						./.

Checking values in brackets

7.78

H17

BOSCH

Geschäftsbereich KH, Kundendienst, Kfz-Ausrüstung.
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H17

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1410 1650	15,0-18,3 0 - 1	-	-	-	ca. 12	100 300 600- 950	min. 7,9 6,3-6,5 760=2,0 0 - 1	300 1410	0,3-1,4 8,2
ca. 66	9,8 4,0	1440-1450 1500-1530				350.450 (3a)			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	69,5-70,5 (67,5-72,5)	1440-1450*			100 24 V	16,2-16,6 Electromagnet		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

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Test Specifications Fuel Injection Pumps ② and Governors

En

PES 6 A 95 D 410 LS 2541 RQ250/1100 AB 1049 DL (1)
 LS 2541 250/1050 AB 1042 DL (2)
 LS 2541Z 250/1050 AB 1042 DL (3)

supersedes 1.80
 company: MAN
 engine: D2566 MUH
 (1) 161,8 kW(220 PS)
 (2) 141,0 kW(192 PS)
 (3) 129,0 kW(175 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,50-1,60 mm (from BDC)
 (1,45-1,65)

Cyl. 6

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,2-11,3	11,4-11,6	0,3(0,6)	9,8-9,9	9,5-9,7	n= 1050 (2)
250	5,9-6,1	0,8- 1,4	0,3(0,5)	9,2-9,3 5,9-6,1	8,7-8,9 0,8-1,4	n= 1050 (3)
700/500	-	C, 4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

(1)

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 4		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		Control rod travel mm 5		Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12	
600	15,6-16,4	600	16	10,2	1145-1160	250	6,0	100	min.7,5	1100	11,2-11,3
1100	11,0-11,4			4,0	1185-1215					845	11,2-11,5
1250	0 - 1							250	5,9-6,1	750	11,4-11,6
								360-400	= 2,0	600	11,6-11,7

Torque-control travel on flyweight assembly dimension a = 0,3 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /-1000 strokes 2				cm ³ /-1000 strokes 5		cm ³ /1000 strokes/mm 7	
1100	112,5 - 114,5 (110,5 - 116,5)			700 500	102,5-105,5 (100,5-107,5) max. 106,5 (108,5)	100 250	124,0-134,0 6,0

Checking values in brackets

6.80

B. Governor Settings

(2)

MAN 11,1 p 2

-2-

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12 +0,1
600	15,6-16,4	600	16,0	3,8	1095-1110	250	6,0	100	min.7,5	1050	9,8
1050	9,8-10,0			4,0	1165-1195			250	5,9-6,1	815	10,4
1250	0 - 1							360-400	=2,0	600	10,7
								450	0 - 1		

Torque-control travel on flyweight assembly dimension a = 0,4 mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
(2) 1050	93,5 - 95,5 (91,5 - 97,5)			700	90,0 - 93,0 (88,0 - 95,0)	100	124,0 - 134,0
				500	max. 91,5 (93,5)	250	6,0 mm RW

Checking values in brackets

B. Governor Settings

(3)

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12 ±0,1
600	15,6-16,4	600	16,0	8,2	1095-1110	250	6,0	100	min.7,5	1050	9,2
					1160-1190			250	5,9-6,1	815	9,9
1050	9,0-9,4							360-400	=2,0		
1250	0 - 1							450	0 - 1	600	10,1

Torque-control travel on flyweight assembly dimension a = 0,4 mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
(3) 1050	85,5-87,5 (83,5-89,5)			700	81,0-84,0 (79,0-86,0)	100	124,0-134,0
				500	max. 80,5 (82,5)	250	6,0 mm RW

En Checking values in brackets

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 6,2 1

1. Edition

En

PE 6 A 85 D 320 RS2546 RQ 250/1200 AB 1023R
RSV250-900 A7 B2061R

supersedes -
company: D A F
engine: D D 615

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,5-9,6	4,8 - 5,0	0,3 (0,45)			
250	5,9-6,1	0,9 - 1,5	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

RQ.. 1023 R

Checking of slider PRG check rev/min 1		Control rod travel mm 2		Full-load speed regulation Setting point rev/min 3		Control rod travel mm 4		Test specifications Control rod travel mm 5		rev/min 6		Idle speed regulation Setting point rev/min 7		Control rod travel mm 8		Test specifications rev/min 9		Control rod travel mm 10		Torque control rev/min 11		Control rod travel mm 12	
550	19,2-20,8	550	20,0	8,5	1245-1260	250	6,0	100	min.7,5	-	-	250	5,9-6,1	305-	345 =2,0	450	0 - 1						
1200	Breakway		VH ca.49°		4,0 1310-1340																		
1450	0 - 1																						

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6		Control rod travel mm 7	
1000	49,0 - 50,0 (47,0 - 52,0)								

Checking values in brackets

5.79

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Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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Testoil-ISO 4113

H23

H23

B. Governor Settings

DAF 6,2 1
RSV..2061R

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800 X	0,3-1,0 = 4,0	-	-	-	ca. 19	250	5,5	650	10,5-10,6
ca. 53	9,5 4,0 1100	940-950 955-985 0,3-1,7				3a	100 min. 19 250 5,9-6,1 290-350 = 2,0 450 0 - 1		370 11,7	12,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
In accordance with nameplate		940-950*							

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications

Fuel Injection Pumps ②

and Governors

WPP 001/4

1. Edition

En

PES 4 A 90 D 410 RS2518 RQ 300/1200 AB989DL (1)
RS2518Z ..989DL (2)

supersedes ..

company: OM Brescia

engine: C03/110 (1)
8340.05 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,3	6,0 - 6,2	0,3(0,45)	11,1	6,9 - 7,1	
300	+ 0,1 7,9-8,1	0,9 - 1,5	0,2(0,4)	+0,1 7,9-8,1	0,9 - 1,5	
900/500	- - -	C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

(1)

Checking of slider PRG check ①		Full-load speed regulation ④				Idle speed regulation ⑤				Torque control ③	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	Setting point rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,6-16,4	500	16,0	9,3	1245-1260	300	6,0	100	min.7,5		± 0,1
1200	15,6-16,0			4,0	1360-1390			300	5,9-6,1	1200	10,3
1450	0 - 1							450-490	= 2,0	710	10,6
								600	0 - 1	630	10,9

Torque-control travel on flyweight assembly dimension a = 0,4 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) ②		Control rod stop ③a	Fuel delivery characteristics ③b		Starting fuel delivery Idle speed ⑥	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes/mm 7
1200	60,5 - 61,5 (58,5 - 63,3)	500	900	55,5 - 58,5 (53,5 - 60,5)	100	116,25-122,25
			500	58,5 - 61,5 (56,5 - 63,5)		
						./.

Checking values in brackets

3.78

B. Governor Settings

(2 - Z) Ppe2518Z

-2

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12
600	15,6-16,4	600	16,0	10,1	1245-1260	300	6,0	100	min.7,5		± 0
				4,0	1370-1400			300	5,9-6,1	1200	11,1
1200	15,6-16,0							445-	485=2,0	710	11,3
1450	0 - 1							600	0 - 1	500	11,4

Torque-control travel on flyweight assembly dimension a = 0,4 mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7
1200	69,5 - 70,5 (67,5 - 72,5)	500		900	67,5 - 70,5 (65,5 - 72,5)	100	126,25-129,25
				500	61,5 - 64,5 (59,5 - 66,5)		

Checking values in brackets

B. Governor Settings

Checking of slider PRG check		Full-load speed regulation				Idle speed regulation				Torque control	
①		Setting point		Test specifications		Setting point		Test specifications		③	
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11	12

Torque-control travel on flyweight assembly dimension a = mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop		Fuel delivery characteristics		Starting fuel delivery Idle speed	
②		③a		③b		⑥	
rev/min	cm ³ /-1000 strokes	rev/min		rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes / mm
1	2	3		4	5	6	7

En Checking values in brackets

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4

1. Edition

En

PES 8 A 75 D 320 RS 2463 EP/RSV 450-1300 A0B 1088 D
Inlet pressure 2,5 bar (1)

supersedes -
company: IHC
engine: DV 550 C
(172 PS)

See note 1,2,3 -page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,3) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	10,75-	6,7 - 6,8	0,3			
300	10,85	0,1 - 1,5 - 3,6 - 4,2 -	(Cyl. 1- (Cyl. 2-	4-6-7) 3-5-8)		

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever 1	rev/min 2	Control rod travel mm 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	Control rod travel mm 11
ca.52	1300 1320 1500	12,8-13,2 12,2-12,6 4,8- 6,8	without auxiliary spring			ca.30	450	5,7	900	10,9- 11,1
⑤	1580 1700	1,5- 4,0 0,2- 1,2					100 380 600 750	19 - 21 6,5-21,0 1,5- 3,5 0- 1,0	540	10,9- 11,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational- speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min 1	cm ³ /1000 strokes 2	rev/min 3		rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1300	67,0-68,0 (66,0-69,0)	1475 1475: 6-7 mmRW		900	61,5-63,5 (60,5-64,5)	100 450 100 450	112,0-135,0 8,0- 10,0 0 0)	Cyl. 2-3-5-8 Cyl. 1-4-6-7 ./.	

Checking values in brackets

* 1 mm less control rod travel than col. 2

- (1) Supply pressure 2.5 bar
- (2) Barrel 1: Start of dely. at CRT 10.7 = $1.95 + 0.05$ mm - cyl. 1-7-6-4 (90° each)
Barrel 2: Port opening at CRT 10.7 = $3.95 + 0.05$ mm - cyl. 2-8-3-5 (90° each)
- (3) In start-of-delivery position of barrel 1 at CRT 10.7 mm, use setting device to position jaws of coupling horizontally and tighten screws to 25 - 30 N !

Test Specifications Fuel Injection Pumps and Governors

VDT-WPP 001/4

2. Edition

En

PES 6 A 85D 420 LS 2264
LS 2460

EP/RSV 375-1100 A 2 B 636 DR

supersedes 22.3.73
company: Case
engine: A 504 BD

Test with case overflow valve!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	9	4,1 - 4,5	0,5			
	6	1,1 - 1,9				
	12	7,2 - 8,0				
200	6	0,9 - 1,7				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca. 47	1120	13,0	without auxiliary spring			ca. 23	375	7,9	1100	0
	1160	8,6					150	19 - 21	900	0,5-0,7
	1190	4,4					375	7,6-8,2	600	0,7-1,0
⑤	1140	12,6-13,2	with auxiliary spring				450	4,5-6,1		
	1200	4,0- 6,2					620	0 -1,5		
	1260	0,3-1,5								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery Idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Note: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	3		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2			4	5	6	7	8	9
1100	92,5-94,5	1140-1155*		750	101,5-105,5	100	12,6-13,4	375	18,5- 22,5
				650	max. 104,5				
				1200	12,5- 20,5				

Checking values in brackets

* 1 mm less control rod travel than col. 2

As opposed to VDT-WPP 001/4 - 1st supplement - pumps 2263, 2264, 2354, 2459, 2460, 2461 and 3013 feature the following special setting:

- | | | |
|--|----------------------------|------|
| 1. Governor-spring adjustment | corresponds to | (1) |
| 2. Pre-adjustment of full-load delivery and noting down of control-rod travel | roughly corresponds to | (2) |
| 3. Reduce full-load control-rod travel as opposed to (2) by 1.0 mm by screwing back full-load stop screw | roughly corresponds to | (2) |
| 4. Screw in torque-control retainer until full-load delivery is attained | roughly corresponds to | (3) |
| 5. Adjustment of breakaway | corresponds to | (4) |
| 6. Testing of torque control and fuel-delivery characteristics | roughly corresponds to (3) | (3a) |
| 7. Idle adjustment | corresponds to | (4) |
| 8. Testing high idle; test starting fuel delivery and adjust with control-rod stop | corresponds to | (5) |

Please consult test instructions as regards information given in parentheses!

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 n 4

40

1. Edition

En

PES 6 A 90 D 410 RS 2517 RQV 300-1425 AB981L

supersedes -

company: Daimler-Benz

engine: OM 352
(130 PS)

** TAS-Instruction see page 2!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,7	6,1 - 6,3	0,3(0,45)			
300	$\frac{(+0,1)}{7,3-7,5}$	0,6 - 1,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1700	16,0-19,4 0 - 1				ca. 10	100 300 570 800	min. 7,3 5,7-5,9 -630=2,0 0 - 1	400 1425	1,4-2,2 8,1
ca. 61	8,7 4,0	1455-1465 1540-1570				3a	350-500			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	61,5-62,5 (59,5-64,5)	1455-1465*			100	10,1-10,3 mm RW**		
					300	6,25-12,25		
					100-220(80-240)			./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.77

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J9

J9

MB 5.7 n 4

Note:**

TAS (temp.-cont'd lim. of start-fuel dely.) is set after adjusting full-load delivery and switching point:

1. Additionally attach control-rod-travel measuring device 0 681 440 009 (EFEP 171) and make it correspond to previously fitted control-rod-travel measuring device on drive end.
2. Detach control-rod-travel measuring device on drive end.
3. Fit TAS and at $n = 100 \text{ min}^{-1}$ set it to 10.1 - 10.3 mm control-rod travel at ambient temperature.
4. Tightening torque 3.0 mkp on threaded bushing at pump housing.

Test Specifications Fuel Injection Pumps and Governors

PE 6 A 90 D 320 RS2384

EP/RSV 250-1200 A5 B779R

supersedes

company: D A F

engine: DT 615

Refer to Page 2 for LDA (manifold-pressure compensator)
setting and start test!

Port closing difference between control-rod travel 9 mm and max. 2,5 - 3,5°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{matrix} 2,20-2,30 \\ (2,15-2,35) \end{matrix}$ RW 9 mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ /100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1000	10,3	7,0 - 7,2	0,3(0,45)			
250	5,8-6,0	+0,1 0,8 - 1,2	0,2(0,4)			
600	- - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			④ Lower rated speed			③ Torque control	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel ± 0,1 mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca. 22	250	5,5	250	10,8
ca. 54	9,4	1240-1250					100	min. 19		
⑤	4,0	1285-1315					250	5,9-6,1		
	1450	0,3-1,7					380-410	= 2,0		
							520	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

② Full-load stop		⑥ Rotational-speed limitat.		③a Fuel delivery characteristics		Starting fuel delivery idle		⑤a Idle stop	
Test oil temp. 40°C (104°F)		Notes: changed to ... rev/min							
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 70,5-71,5 (68,5-73,5)	1240-1250*	LDA 600	0 bar 50,0-52,0 (48,0-54,0)					./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

DAF 6,2 c 3

-2-

Test at n = 1000 rev/min decreasing pressure - in bar gauge pressure
increasing

Pump/governor	Setting	Measurement	Control rod travel - diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2384 with 779R	0		9,3 - 9,5
		0,14	9,6 - 9,9
		0,26	10,1 - 10,2
		0,68	10,3 - 10,4

Testoil-ISO 4113

Notes

(1) when n =

rev/min and
gauge pressure =

bar (= maximum full-load control rod travel)

Adjustment information:

1. First adjust full-load delivery at max. pressure at LDA (manifold-pressure compensator) stop screw in housing.
Then set 1/2 of a turn more control-rod travel at injected-quantity stop screw of governor.
2. Adjust full-load delivery without charge-air pressure at bell crank in LDA.
3. Cold-start device (see sketch)

Test disengaging force at $n = 0 \text{ min}^{-1} = 32 - 38 \text{ N}$ with spring scale.

Set starting control-rod travel to $20 \pm 0.5 \text{ mm}$.

Test disengaging speed $n = 800 - 1000 \text{ min}^{-1}$.

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 OMB 7,4 a
4. Edition

En

PES 6 A 90 C 410 RS 2340
.. D ..

RQV 250-1300 AB 803 D
RQV 325-1050 AB 923 D
RQV 250-1300 AB 944 D

supersedes 12.71,7.74,3.75
company: OM Brescia
engine: CP 3

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,8 - 6,3	0,4			
	6	2,5 - 3,4				
	12	10,2 - 11,1				
200	9	3,2 - 4,1				

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

RQV .. 803D

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1340	15,0-17,4	-	-	-	ca. 10	140	6,0-8,0	1340	8,3
	1450	8,2-12,8					250	4,2-6,1		
	1550	0,5- 7,9					400	0,2-1,4	1300	0
	1680	0					630	0	600	0,1-0,3
						3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	
1300	74,0 - 76,0	1320	1000	72,5-75,5	100	ca. 15mmRW			
			600	64,5-67,5					

Checking values in brackets

* 1 mm less control rod travel than col. 2

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6.75

J15

B. Governor Settings

RQV .. 923D

Ppe 2340-

OMB 7,4a

-2-

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1060	15,0-18,0	-	-	-	ca. 18	150	9,6-11,7	1060	8,3
	1120	9,7-14,4					250	7,4-10,0		
	1220	0 - 7					380	2,0- 5,0		
	1310	0					670	0	1060	0
						(3a)			600	0,3-0,4

Torque control travel a = 0,3 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min
1	2	3	4	5	6	7	8
1050	77,5-79,5	1090-1100*	500	66,0-69,0	100	15,0-15,6mm	RW
					Change-over point 200-270 U/min		

Checking values in brackets

* 1 mm less control rod travel than col 2

**** Use overspeed sensor to effect adjustment
such than lamp lights up at n = 1455-1465.
Check full load after setting sensor!**

B. Governor Settings

RQV .. 944 D

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1340	15,0-17,4	-	-	-	ca. 10	140	6,0-8,0	1340	8,3
	1450	8,2-12,8					250	4,2-6,1		
	1550	0,5- 7,9					400	0,2-1,4		
	1680	0					630	0	1300	0
						(3a)			600	0,1-0,3

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min
1	2	3	4	5	6	7	8
1300	74,0-76,0	1340-1350*	1100	73,5-76,5	100	ca. 15mm RW	
		**	500	61,0-64,0			

Checking values in brackets

* 1 mm less control rod travel than col 2

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

PES6A90D410RS2571

RQV300-1400AB884L

supersedes

company:

engine:

Daimler-Benz

OM 352 A

1 - 5 - 3 - 6 - 2 - 4

0 - 60-120-180-240-300 ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,00-2,10}{(1,95-2,15)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,0-12,1	6,4-6,5	0,3(0,45)			
300	6,4-6,6	0,8-1,4	0,2(0,4)			
600	- - - -	C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca. 11	100 300 1100	min. 8,0 6,4-6,6 max. 1,0		
ca. 54	12,0 3,4	1440-1450 1575-1605				(3a)	580-640=2,0 370-440			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics		Starting fuel delivery idle switching point		Torque-control	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	64,0-65,0 (62,0-67,0)	1440-1450*	600	48,0-50,0 (46,0-52,0)	100	72,25-82,25		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 12,8 f
1. Edition

En

PE8A90D320LS2514

RQV250-1250 AB 1127 R

supercedes -
company: MAN
engine: D 2538

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1
0 - 45- 90-135-180-225-270-315

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,45-1,65) mm (from BDC) RW 10,5 Cyl. 8
1,50-1,60

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	11,5	10,2 - 10,3	0,3(0,45)			
250	+ 0,1	0,9 - 1,5	0,2(0,4)			
800	6,9-7,1	C, col. 4 - 5	0,4(0,55)			
500	-		0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1250 1500	15,2-17,8 0 - 1				ca. 13	100 250 450 345-405 = 2,0	min. 8,4 6,9-7,1 1,0	250 630 1300	1,1 4,5-4,9 8,8
ca. 47	10,5 4,0	1290-1300 1355-1385				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /100 strokes	rev/min	cm ³ /100 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10
1250	102,5-103,5 (100,5-105,5)	1290-1300 *	800	96,0- 99,0 (94,0- 101,0)	100	134,25 - 144,25	1250	11,5	
			500	min. 94,0	250	7 mm RW	1035	11,5	
							810	11,8	
							500	11,9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 3

2. Edition

En

PES 4 A 90 D 410 RS 2570 RQV 300-1400 AB 1111 - 1 L

supersedes 11.80

company: Daimler-Benz

engine: OM 314

62,5 kW(85 PS)

1 - 3 - 4 - 2
0 - 90 - 180 - 270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,20-2,40)

RW 10,5

Port closing at prestroke

2,25-2,35

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,2 - 6,3	0,3(0,45)			
	+0,1					
300	8,2-8,4	0,9 - 1,5	0,2(0,4)			
400	- - - Sect. C, col. 4,5		0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0 - 1				ca. 20	100 300	min. 9,8 8,2-8,4	300 650 1450	1,1 3,8-4,0 8,0
ca. 62	9,2 4,0	1440-1450 1535-1565				3a	570-630 = 2,0			

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	62,5-63,5 (60,5-65,5)	1440-1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25 14,8-15,2 mm RW	1400 1000 600 400	10,2 10,6 10,8 11,2
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 4

2. Edition

En

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1124 L

supersedes 11.80
company: Daimler-Benz
engine: OM 314
62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40)
2,25-2,35 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,2 - 6,3	0,3(0,45)			
300	+0,1 8,2-8,4	0,9 - 1,5	0,2(0,4)			
400	- Sect. C, col. 4,5	0,4(0,55)				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel ①	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0 - 1				ca. 20	100 300	min. 9,8 8,2-8,4	300 650 1450	1,1 3,8-4,0 8,0
ca. 62	9,2 4,0	1440-1450 1535-1565				③a	570-630 = 2,0			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	62,5-63,5 (60,5-65,5)	1440-1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25 14,8 - 15,2 mm RW	1400 1000 600 400	10,2 10,6 10,8 11,2
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 12,8 b

2. Edition

En

PE 8 A 95 D 320 LS 2421 RQV 250-1250 AB967R

supersedes 8.77

company: M A N

engine: D 2538 MTE

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1

0 -45 -90 -135-180-225-270-315^o ± 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,70-1,80}{(1,65-1,85)}$ mm (from BDC) Cyl. 8

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,4	10,1 - 10,3	0,3(0,6)			
	(+0,1)					
250	6,4-6,6	1,5 - 2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1275 1450	14,4-17,4 0 - 1	-	-	-	ca. 13	100 250 310-370 = 2,0 500	min. 7,5 5,9-6,1 3 - 1	200 600 1275	0,5-1,2 4,0-4,4 8,3
ca. 43	9,5 4,0	1290-1300 1340-1370				(3a)			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	99,5 - 101,5 (97,5 - 103,5)	1290 - 1300			100 250	15,7-16,3 mm RW 15 - 21		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 2

1. Edition

En

PES4A90D410RS2570

RQV300-1400AB1065DL

supersedes -

company:

Daimler-Benz

OM 314

engine:

62,5 kW(85PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{2,25-2,35}{(2,20-2,40)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,5-10,6	5,9 - 6,0	0,3(0,45)			
300	5,9-6,1	1,1 - 1,7	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 62	400 700	15,2-17,8 0 - 1	-	-	-	ca. 11	100 300	min. 7,5 5,9-6,1		
ca. 60	9,5 4,0	1440-1450 1550-1580				3a	380-450			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	59,0-60,0 (57,0-62,0)	1440-1450*	1000	58,0-60,0 (56,0-62,0)	100	72,25-82,25	1400	10,5-10,6
			600	51,0-53,0 (49,0-55,0)	100-220(80-240)		1075	10,6-10,7
							600	10,7-10,8

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 5,7 w 1

1. Edition

En

PES 6 A 90 D 410 RS 2565 RQV 300-1400 AB 884L

supersedes

company

engine

-
Daimler-Benz
OM 3521 - 5 - 3 - 6 - 2 - 4
0 - 60 - 120 - 180 - 240 - 300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,05-2,25) mm (from BDC) RW 10,5
2,10-2,20

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1	6,1 - 6,2	0,3(0,45)			
300	+0,1 6,0-6,2	0,8 - 1,4	0,2(0,4)			
600	- - -	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1,0				ca. 13	100 300 610-670 = 2,0	min. 8,0 6,0-6,2		
ca. 56	10,1 3,4	1440-1450 1575-1605				330-400 (3a)				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	61,0-62,0 (59,0-64,0)	1440-1450*	600	52,0-54,0 (50,0-56,0)	100	13-13,4 mm RW 72,25-82,25 100-220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

J24

J24

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10.80

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 2

2. Edition

40

En

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1065-1 DL

supersedes

company:

engine:

2.80

Daimler-Benz

OM 314

62,5 kW(85 PS)

1 - 3 - 4 - 2

0 -90-180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke ^{2,25-2,35}
 (2,20-2,40) mm (from BDC) RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,2 - 6,3	0,3(0,45)			
300	+0,1 8,2-8,4	0,9 - 1,5	0,2(0,4)			
400	-	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0 - 1	-	-	-	ca. 20	100 300	min. 9,8 8,2-8,4	300 650	1,1 3,8-4,0
ca. 62	9,2 4,0	1440-1450 1535-1565				3a	570-630 = 2,0		1450	8,0

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9 + 0,2
1400	62,5-63,5 (60,5-65,5)	1440-1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25	1400 400 600 1000	10,2 11,2 10,8 10,5
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

K1

K1

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10.80

①

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 3,8 n 3

1. Edition

En

PES4A90D410RS2570

RQV 300-1400 AB 1111-1L

supersedes

company:

engine:

Daimler-Benz

OM 314

62,5 kW(85 PS)

1 - 3 - 4 - 2
0 -90 -180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,20-2,40)

Port closing at prestroke

2,25-2,35

mm (from BDC)

RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,4 - 6,5	0,3(0,45)			
300	+0,1 7,9-8,1	0,9 - 1,5	0,2(0,4)			
400	-	C, col.4-5	0,4(0,55)			
1200						

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1400 1700	15,2-17,8 0 - 1				ca.20	100 300 675 545	min.9,4 7,9-8,1 1,0 - 605=2,0	300 650 1450	1,1 3,8-4,0 8,0
ca.62	9,2 4,0	1440-1450 1535-1565				550-670 (3a)				

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed		Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10
1400	64,0-65,0 (62,0-67,0)	1440-1450*	1200	61,5-64,5 (59,5-66,5)	100	72,25-82,25	1400	10,2	
			400	49,5-52,5 (47,5-54,5)			1005	10,4	
							615	11,0	
							400	11,3	
						100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

K2

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11.80

K2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 3,8 n 4

1. Edition

En

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1124 L

supersedes -

company: Daimler Benz

engine: OM 314

62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,20-2,40)

Port closing at prestroke

2,25-2,35

mm (from BDC)

RW 10,5

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,4-6,5	0,3(0,45)			
300	+0,1 7,9-8,1	0,9-1,5	0,2(0,4)			
400	-	C, col. 4-5	0,4(0,55)			
1200	-		0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1700	15,2-17,8 0 - 1				ca. 20	100 300 675 545-605 = 2,0	min. 9,4 7,9-8,1 1,0	300 650 1450	1,1 3,8-4,0 8,0
ca. 62	9,2 4,0	1440-1450 1535-1565				550-670 (3a)				

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b rev/min ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b rev/min cm³/1000 strokes		Starting fuel delivery idle switching point ⑥ rev/min cm³/1000 strokes		Torque-control ⑤ travel rev/min Control rod travel mm	
1	2	3	4	5	6	7	8	9 +0,2
1400	64,0-65,0 (62,0-67,0)	1440-1450*	1200	61,5-64,5 (59,5-66,6)	100	72,25-82,25	1400	10,2
			400	49,5-52,5 (47,5-54,5)			1005	10,4
							615	11,0
							400	11,3
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

K6

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 7,2 d 1

1. Edition

En

Testoil-ISO 4113

PES 6 A 85 D 410 RS2139 RQV 250-1250 AB851 DL

supersedes

company A N

engine: D 0846 HMX

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{1,5-1,6}
(1,45-1,65) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,4			
	6	0,6 - 1,4				
200	9	1,4 - 2,2				

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1320 1400 1500 1600	15,0-18,2 8,6-13,4 0 - 7 0	-	-	-	ca. 10	100 250 450 700	7,0-8,0 5,5-6,8 2,4-4,0 0	300 900 1320	1,8-2,4 4,8-5,2 8,3
						③a			1250 600	0 0,7-0,8

Torque control travel a = 0,7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	69,5 - 71,5	1260-1275 *	800 500	71,0 - 74,0 max. 69,5	100 250	18,0-18,5 7,0		
					130-200/min			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 9,2 e 1

1. Edition

En

PES 5 A 95 D 410 LS2488

RQV 250-1100 AB956L

supersedes-

company: M A N

engine: D 2565 ME

1 - 3 - 5 - 4 - 2 $\pm 0,50$ (0,75)
0 - 72 - 144 - 216 - 288⁰

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,6 (+0,1)	11,8 - 12,0	0,3(0,6)			
250	5,6-5,8	1,4 - 1,9	0,3(0,5)			
500	- - -	C, 4-5 -	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1125 1400	14,4-17,6 0 - 1	-	-	-	ca. 10	100 250 310- 450	min. 7,2 5,6-5,8 370=2,0 0-1	200 600 1120	0,5-1,2 4,1-4,5 8,3
ca. 43	9,6 4,0	1140-1150 1170-1200				③a			-	-

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed rev/min ④a	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	116,5-118,5 (114,5-120,5)	1140-1150*	500	107,5-111,5 (105,5-113,5)	100 250 100- 170 (80-190)	15,7-16,3 mm RW 15 - 20		

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.77

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 STE 6,0 i

1. Edition

En

PE 6 A 90 D 412 RS 2507 RQV 300-1400 AB 970 DL

supersedes

company: Steyr
engine: WD 610.00

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke ^{2,15-2,25}
(2,10-2,30) mm (from BDC)

Testoil-ISO 4113

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	8,5	5,5 - 5,7	0,3(0,45)			
300	(+0,1) 7,4-7,5	0,8 - 1,3	0,2(0,4)			
900/500	Sect. C, col. 4,5		0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 47°	1475	15,2-17,8				ca. 13°	100	min. 9,0	1475	8,2
	1750	0 - 1					300	5,9-6,1		
ca. 39°	1445	ca. 7,5					450-510 = 2,0		1400	8,5-8,6
	1500	ca. 4,0							1100	8,7-9,0
									900	9,2-9,4
									500	9,7-9,8

Torque control travel a = 1,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery Idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	55,5-56,5 (53,5-58,5)	1440-1450*	900	52,0-55,0 (50,0-57,0)	100	111,25- 117,25		
			500	44,5-46,5 (42,5-48,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 n 2

2. Edition

En

PES 6 A 90 D 410 RS2293 RQV 300-1425 AB960 (1)
RS2293Z RQV 300-1425 AB960 (2)

supersedes 3.76
company: Daimler-Benz
OM 352
engine: (130 PS - 1)
OM 352 A
(168 PS - 2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,15-2,25}{(2,10-2,30)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (1) cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,6	6,1 - 6,3	0,3(0,45)	10,8	7,5 - 7,7	
300	(+0,1) 6,0 (±0,1)	1,4 - 2,4	0,2(0,4)	(+0,1) 6,0 (±0,1)	1,4 - 2,4	

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 66	1425 1500 1550 1650 1790	16,0-19,4 11,6-16,0 8,2-13,4 1,4- 8,0 0	-	-	-	ca. 10	100 300 450 600 760	6,6-7,8 4,9-6,4 3,0-4,2 1,3-2,8 0	400 1425 -	1,4-2,2 8,1 -

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤ travel Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	mm 9
(1) 1400	61,5-62,5 (59,5-64,5)	1455-1465* (1450-1470)			100	13,7-14,3 mm RW		
(2) "Z" 1400	74,0-75,0 (72,0-77,0)	1435-1445* (1430-1450)			-	----		
					100-220 min⁻¹			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 m

1. Edition

En

PES 6 A 95 D 410 LS 2489

RQV 250-1100 AB 850 DL

supersedes

company: MAN

engine: D 2566 MUH

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,50-1,60
(1,45-1,65)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7 (+0,1)	12,4 - 12,7	0,3(0,6)			
250	5,9-6,1	1,1 - 1,7	0,3(0,5)			
500	C, col. 4-5		0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50°	1140 1300	14,4-17,6 0 - 1				ca. 13°	100 250 310 - 370=2,0 450	mind. 7,5 5,9-6,1 2,0 0 - 1	1100 800 500	11,7 11,8 11,9
ca. 42°	1145 1190	ca. 10,7 ca. 4,0				3a				

Torque control travel a = 0,5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery Idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7 mm RW	rev/min 8	Control rod travel mm 9
1100	123,0-125,0 (121,0-127,0)	1140-1150 *	500	113,5-118,5 (111,5-120,5)	100 250	12,6-13,0 6,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.76

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 16,0 e

1. Edition

En

PE 10 A 90 D 520/5 LS2515

RQV 250-1150 AB852DR

supersedes -

company:

MAN

engine:

D 2530 MSF

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2
0 - 45 - 72 - 117 - 144 - 189 - 216 - 261 - 288 - 333

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC) Cyl. 10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0 (+0,1)	9,5 - 9,7	0,3(0,45)			
250	7,4-7,6	0,9 - 1,5	0,2(0,4)			
500	- - -	C, 4-5 -	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1175 1350	14,4-18,4 0 - 1	-	-	-	ca. 13	100 250 310-370 = 2,0 450 0 - 1	min.7,2 5,6-5,8 2,0 0 - 1	2000,6-1,2 6004,0-4,4 1170 8,3	
ca. 44	10,0 4,0	1190-1200 1230-1260				③a			-	-

Torque control travel a = 0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b		Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	④a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7 mm RW	rev/min 8	Control rod travel mm 9
1150	95,5-96,5 (93,5-98,5)	1190-1200 *		500	85,0-89,0 (83,0-91,0)	100 250	17,7-18,3 7,0		
							100-170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 p 6

1. Edition

En

PES 6A 95 D 410 LS 2542 RQV 250-1100 AB 1068 DL

supersedes -

company: MAN

engine: (177,0 kW-241 PS)
D 2566 ME/MF

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0-12,1	12,6 - 12,8	0,3 (0,6)			
250	5,9-6,1	0,9 - 1,5	0,3 (0,5)			
750/500	-	C, 4-5	0,4 (0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1100 1300	15,2-17,8 0,0-1,0				ca. 12	100 250	min. 7,5 5,9-6,1	250 565	1,1 3,65-4,05
ca. 44	11,0 4,0	1140-1150 1180-1210				3a	325 - 385 = 2,0		1150	8,1

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics high idle speed ⑤b		Starting fuel delivery Idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	124,5-126,5 (122,5-128,5)	1140-1150 *	500 750	max. 113,5 (max. 115,5) 110,5-113,5 (108,5-115,5)	100 250	124,0-134,0 6,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.79

BOSCH

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Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 HAN 2,8 a 8
3. Edition

En

PE 4 A 60 $\frac{C}{D}$ 310 LS 1088, Z RQ 300/1500 AA 466 D
.. AB 571 D

supersedes 10.64
company: Hanomag
engine: D 28 CKL

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 + 0,1 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	4,5 - 5,0	0,3	12	3,7 - 4,1	
200	6	0,5 - 1,2		9	1,7 - 2,5	
	6	0,3 - 0,9		9	1,0 - 1,8	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
1450	13,6-14,5	1450	14,1	1520	10,0-14,1	540	0	150	7,0-8,1	800	15,7-16,0
				1540	5,6-12,4			300	3,5-5,9		
				1560	0 - 10			400	0 - 2,3	1200	14,2-14,6
				1640	0			440	0		

Torque-control travel on flyweight assembly dimension a = 0,6 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
1500	43,2 - 45,2	750		1150	43,2 - 45,8	100	18 - 21
				800	45,7 - 48,3		
				500	45,7 - 48,3		
"Z"							
1500	40,0 - 42,0	750		1200	37,5 - 40,5		
				800	41,0 - 44,0		
				500	41,0 - 44,0		

Checking values in brackets

10.77

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 v 4

1. Edition

En

PES 6 A 90 D 410 RS 2569

RQV 300-1450 AB 1114 L

supersedes -

company:

Daimler-Benz

engine:

OM 352

81 kW (110 PS)

1 - 5 - 3 - 6 - 2 - 4
0 - 60 - 120 - 180 - 240 - 300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

(2,20-2,40)

Port closing at prestroke

2,25-2,35

mm (from BDC) RW 10,5

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1450	9,2-9,3	4,4-4,5	0,3(0,45)			
300	8,4-8,6	0,9-1,5	0,2(0,4)			
500	- - -	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1450 1700	15,2-17,8 0 - 1,0				ca. 22	100 300 550-610	min. 10,0 8,4-8,6 = 2,0	30,0 650 1500	1,1 3,8-4,0 8,4
ca. 63	8,5 4,0	1490-1500 1565-1595				③a				

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational speed limitation intermediate speed	Fuel delivery characteristics high idle speed		Starting fuel delivery idle switching point		Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
1450	44,5-45,5 (42,5-47,5)	1490-1500*	500	38,0-41,0 (36,0-43,0)	100	72,25- 82,25	1450 1130 760 500	9,2 9,4 9,9 10,3
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 v 1

2. Edition

En

PES6A90D410RS2571

RQV300-1400AB884L

supersedes 2.80

company: Daimler-Benz

engine: OM 352 A

1 - 5 - 3 - 6 - 2 - 4

0 - 60 - 120 - 180 - 240 - 300 ± 0,50(0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Fuel closing at prestroke $\frac{2,00-2,10}{(1,95-2,15)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,2	6,8 - 6,9	0,3(0,45)			
300	+0,1 6,4-6,6	0,8 - 1,4	0,2(0,4)			
600	- - - -	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

Testoil-ISO 4113

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca. 11	100 300	min. 8,0 6,4-6,6		
ca. 54	12,2 3,4	1440-1450 1575-1605				3a	1100 max. 580-640 = 2,0 370-440			

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	68,0-69,0 (66,0-71,0)	1440-1450*	600	51,0-53,0 (49,0-55,0)	100	72,25-82,25		
						100-220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 STE 6,0h 4

1. Edition

En

PE 6 A 85 D 412 RS 2296 RQV 250-1400 AB 1098 L

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes -

company: Steyr

engine: WD 612.00

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke (2,45-2,65)
 2,50-2,60 mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	8,8-8,9	6,4 - 6,5	0,3(0,45)			
250	7,8-8,0	0,9 - 1,5	0,2(0,4)			
1000	- - - -	C, col. 4-5	0,4(0,55)			
500	- - - -	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 68	1400 1650	15,2-17,8 0 - 1,0	-	-	-	ca. 11	100 250 450	min. 7,5 5,9 - 6,1 0 - 1	250 450 1450	0,9 2,5-2,7 8,4
ca. 44	8,7 4,0	1440-1450 1500-1530				3a				

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed rev/min ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery idle switching point ⑥		Torque-control ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1400	64,5-65,5 (62,5-67,5)	1440-1450*	1000 500	63,5-65,5 (61,5-67,5) 53,5-54,5 (51,5-56,5)	100	99,5-109,5	1400 500 1120 1260	8,8-8,9 9,3-9,4 9,1-9,3 8,8-9,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 h 1

1. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 LS2435 RQV 250-1100 AB956L

supersedes

company: M A N

engine: D 2566 ME

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\frac{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7	12,4 - 12,7	0,3(0,6)			
	+0,1					
250	5,9-6,1	0,8 - 1,4	0,3(0,5)			
500	- - -	C, 4 - 5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1120 1300	14,4-17,6 0 - 1	-	-	-	ca. 10	100 250 310-370 = 2,0 450	min. 7,2 5,6-5,8 0 - 1	200 800 1120	0,4-1,2 5,2-5,6 8,3
ca. 48	10,7 4,0	1140-1150 1180-1210				③a			-	-

Torque control travel a = mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed limitation intermediate speed ②b	Fuel delivery characteristics ⑤a		Starting fuel delivery idle switching point ⑥		Torque-control travel ⑤	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes mm RW 7	rev/min 8	Control rod travel mm 9
1100	123,0-125,0 (121,0-127,0)	1140-1150*	500	113,5-118,5 (111,5-120,5)	100 250	12,6-13,0 6,0		
						100-170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.78

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4

1. Edition

En

PES 6 A 95 D 420 LS 2595 RQ 200/1050 AB 1094

supersedes

company:

 engine: Raba-Ungarn
D2156 HM6U
(141,0kW-192PS)

 1 - 5 - 3 - 6 - 2 - 4 $\pm 0,50$
 0 -60 -120-180-240-300 ($\pm 0,75$)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $2,00-2,10$
 ($1,95-2,05$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,6-10,7	10,3-10,5	0,3(0,6)			
200	6,9-7,1	1,1- 1,5	0,3(0,5)			
800/500	-	C, col.4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		rev/min 9		Control rod travel mm 12	
500	19,2-20,8	500	20,0	9,6	1095-1110	200	6,0	100	min.7,5	1050	10,6-10,7
1225	0 - 1,0	VB ca. 49	4,0	1125-1155				200	5,9-6,1	840	10,7-11,0
								350	max.1,0	740	11,1-11,3
								270-	310=2,0	500	11,3-11,4

Torque-control travel
on flyweight assembly dimension a = 0,28 mm

Speed regulation: At

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes/mm 7	
1050	102,0-104,0 (100,0-106,0)			800	103,0-106,0 (101,0-108,0)	100	154,0-164,0
				500	max. 91,5 (max. 91,5)	200 100-140	12,0-16,0 (80 - 160)

Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 7,2 k

1. Edition

En

Testoil-ISO 4113

PES 6 A 85 D 410 RS2139Y

RQV 250-1250 AB906DL

supersedes-

company: M A N

engine: D 0836 HM7/HM74
(156 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

 Port closing at prestroke $\overset{1,50-1,60}{(1,45-1,65)}$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,0	7,0 - 7,2	0,3(0,45)			
	(+0,1)					
250	6,8-7,0	0,8 - 1,4	0,2(0,4)			
800/500	- - -	C, 4-5 -	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever 1	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 6	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 9	rev/min 10	mm 11
ca. 50	1275	14,4-17,4	-	-	-	ca. 13	100	min. 7,1	200	0,5-1,2
	1450	0 - 1					250	5,5-5,7	600	4,0-4,4
							315-375	=2,0	1275	8,3
ca. 43	9,0	1290-1300					450	0 - 1		
	4,0	1335-1365							1250	+0,1
									1000	10,6
									500	10,7

Torque control travel a = 0,7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) ②		Rotational-speed ②b limitation intermediate speed ④a	Fuel delivery characteristics ⑤a high idle speed ⑤b		Starting fuel delivery ⑥ idle switching point		Torque-control ⑤ travel Control rod travel mm	
rev/min 1	cm³/1000 strokes 2	rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7 mm RW	rev/min 8	Control rod travel mm 9
1250	71,0 - 72,0 (69,0 - 74,0)	1290-1300	800	73,0 - 76,0 (71,0 - 78,0)	100	17,7-18,3		1250
			500	70,0 - 73,0 (68,0 - 75,0)	250	7,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 MB 8,7 c 1

1. Edition

En

PE 6 A 90 D 410 RS 2124 X RQ 375/1275 AB 658 DL

supersedes -

company: Daimler-Benz

engine: OM 360

125 kW(170 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25
(2,1 - 2,3)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	9,3-9,4	7,7 - 7,8	0,3(0,45)			
375	7,4-7,6					
700	10,1+0,1	7,7 - 8,0	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 9 rev/min 10		Torque control rev/min 11		Control rod travel mm 12	
700	15,6-16,4	700	16,0	8,3 4,0	1295-1310 1345-1375	375	7,5	100 375 500 465-	min.9,0 7,4-7,6 max. 0 505=2mm	1250 1075 895 700	9,3-9,4 9,4-9,7 9,8-10,0 10,1-10,2		

Torque-control travel
on flyweight assembly dimension a = 0,4 mm

Speed regulation: At 1295-1310 min

1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6		Control rod travel mm 7	
1250	77,0-78,0 (75,0-80,0)	650		700	77,0-80,0 (75,0-82,0)	-		-	

Checking values in brackets

4.81

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 OMB 8,1 a

1. Edition

En

PES 6 A 90 D 410 RS 2494 RQ 275/1300 AB 1034 DL

supersedes
company: OM-Brescia
engine: 8360.05.291

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

^{2,15-2,25}
(2,1 -2,3)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,4+0,1	7,05-7,15	0,3(0,45)			
275	8,3-8,5	0,4 - 0,9	0,2(0,4)			
700						
500	13,4-0,1	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5 rev/min 6		Idle speed regulation Setting point rev/min 7 Control rod travel mm 8		Test specifications rev/min 9 Control rod travel mm 10		Torque control rev/min 11 Control rod travel mm 12	
700	15,6-16,4	700	16,0	11,4 4,0 1600	1345-1360 1450-1480 0 - 1,0	275	6,0	100 275 600 465-	min.7,5 5,9-6,1 max.1,0 505=2,0	1300 810 710 600	12,4+0,1 12,6+0,3 13,3+0,1 13,4+0,2

Torque-control travel
on flyweight assembly dimension a = 0,4 mmSpeed regulation: At 1345-1360 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1 cm ³ /~1000 strokes 2		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4 cm ³ /~1000 strokes 5		Starting fuel delivery Idle speed rev/min 6 cm ³ /1000 strokes/mm 7	
1300	70,5-71,5 (68,5-73,5)	500		700 500	71,5-74,5 (69,5-76,5) 65,5-68,5 (63,5-70,5)	100	20,0 - 21,0 mm RW

Checking values in brackets

5.81

②

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MAN 11.1 b 3

1. Edition

En

Testoil-ISO 4113

PES 6 A 95 D 410 LS 2409

RQ 250/1150 AB 869 DL

supersedes -

company

engine

MAN

D 2556 MXE

232 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $1,3 + 0,1$ mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,4 - 8,0	0,4			
200	6	3,2 - 4,2				
	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider		Full-load speed regulation				Idle speed regulation				Torque control	
rev/min 1	Control rod travel mm 2	Setting point rev/min 3	Control rod travel mm 4	Test specifications rev/min 5	Control rod travel mm 6	Setting point rev/min 7	Control rod travel mm 8	Test specifications rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12
600	15,7-16,3	600	16,0	1170 1200 1250 1320	15,6-16,0 11,0-15,0 0 - 9,6 0	550	0	150 250 350 450	6,5-8,1 4,7-6,9 1,7-4,2 0	-	-

Torque-control travel on flyweight assembly dimension a = 0 mm

Speed regulation: At 1190-1205 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel delivery characteristics		Starting fuel delivery	
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7
1150	121,5 - 123,5		500	max. 118,5	100 250	11 - 12 7 mm RW

Checking values in brackets

3.81

BOSCH

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L12

L12

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4 OMB 8,1 a 1

1. Edition

En

PES 6 A 90 D 410 RS 2494 RQ 275/1300 AB 969 DL

supersedes

company:

engine:

OM-Brescia
8360.05.200
118 kW (160PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,15-2,25$
($2,10-2,30$) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ /100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	13,2+0,1	8,0 - 8,1	0,3(0,45)			
275	8,3-8,5	0,4 - 0,9	0,2(0,4)			
700	13,6+0,2					
500	14,0+0,1	C, col. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in .

B. Governor Settings

Checking of slider PRG check rev/min 1		Full-load speed regulation Setting point rev/min 3		Test specifications Control rod travel mm 5		Idle speed regulation Setting point rev/min 7		Test specifications Control rod travel mm 10		Torque control rev/min 11	
	Control rod travel mm 2		Control rod travel mm 4		rev/min 6		Control rod travel mm 8		Control rod travel mm 12		Control rod travel mm 12
900	13,6-15,0	900	14,3	12,2 4,0 1600	1345-1360 1440-1470 0 - 1,0	275	5,8	100 275 600 420-480=2,0mm	min. 7,3 5,7-5,9 max. 1,0	1300	13,2+0,1
										700	13,6+0,2
										500	14,0+0,1

Torque-control travel
on flyweight assembly dimension a =

mm

Speed regulation: At 1345-1360 min⁻¹1 mm less control
rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F) rev/min 1		Control rod stop rev/min 3		Fuel delivery characteristics rev/min 4		Starting fuel delivery Idle speed rev/min 6	
	cm ³ /1000 strokes 2				cm ³ /1000 strokes 5		cm ³ /1000 strokes 7
1300	80,0 - 81,0 (78,0 - 83,0)	-		700	77,5 - 80,5 (75,5 - 82,5)	100	109,25-119,25
				500	71,5 - 74,5 (69,5 - 76,5)		

Checking values in brackets

5.81

Testoil-ISO 4113